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Rick Morgan

A-6 INTRUDER UNITS 1974-96

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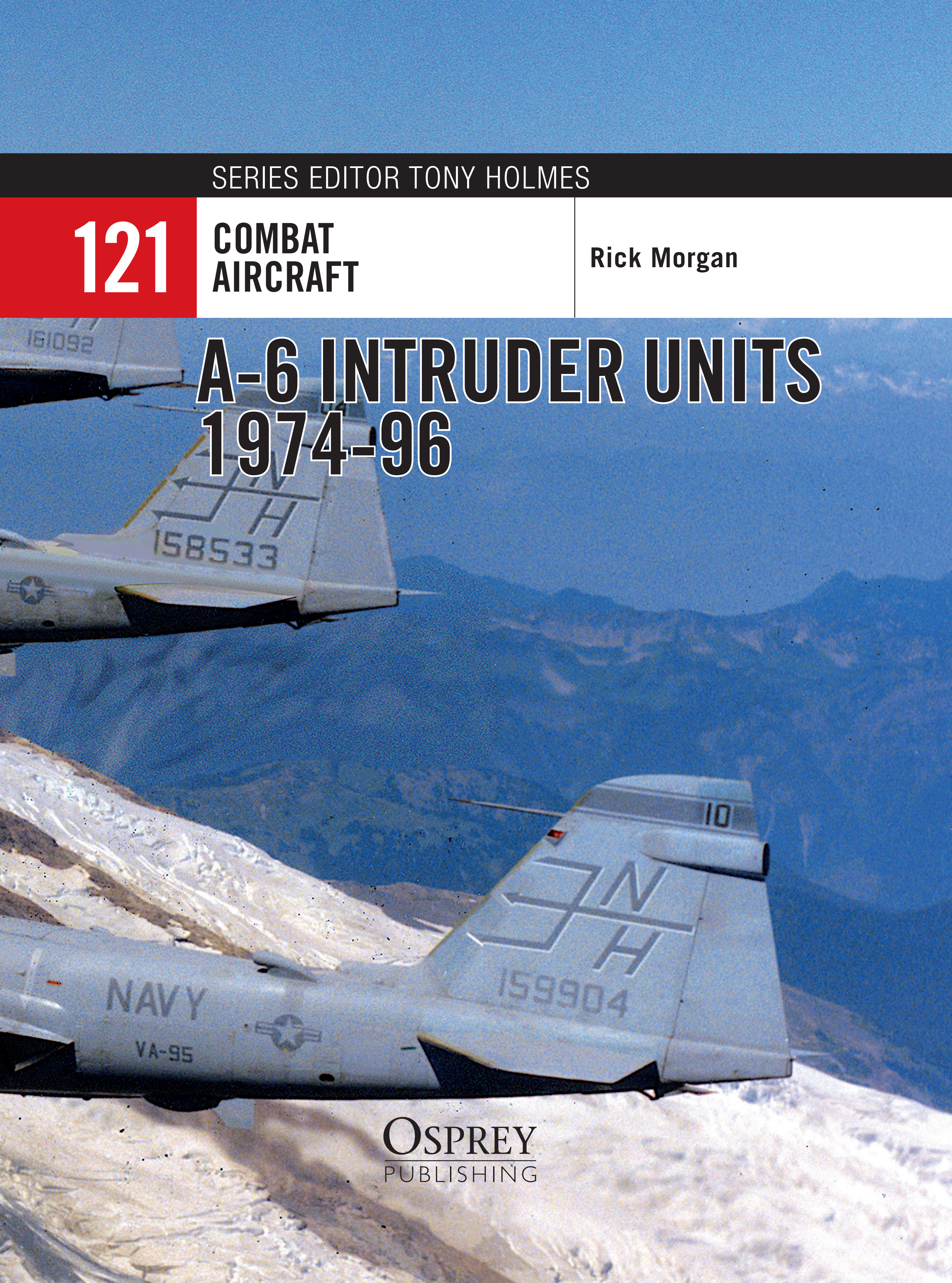
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SERIES EDITOR TONY HOLMES

121 COMBAT AIRCRAFT

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OSPREY
PUBLISHING

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INTRODUCTION

'All-Weather Attack – To conduct all-weather offensive air-to-surface attack operations with conventional and nuclear weapons.'

This sentence, which is out of the annual Naval Aviation Organization document, pretty much sums up the role that Medium ('All-Weather') Attack had within the US Navy. Between the end of the Vietnam War and Medium Attack's last breaths in 1996 the Intruder truly led the way for Naval Aviation.

Within the community, the crew, Naval Aviators and Naval Flight Officer (NFOs), fiercely believed, no matter what the fighter guys would tell you, that they represented the true elite of Naval Aviation. They thought that they could get their aircraft in to any target in any weather and deliver the goods. Everyone else outside the attack community (particularly the fighters) were support platforms as far as they were concerned, and their buddies flying A-7s were 'little brothers' at best. Even after the motion picture *Top Gun* came out, the brotherhood of Medium Attack responded with the retort 'Fighter Pukes Make Movies. Attack Crew Make History', which became a bumper sticker widely seen on cars at both Naval Air Stations Whidbey Island and Oceana – home of the Medium Attack community.

Between 1974 and 1996 'Medium Attack' defined the heart of the strike capability that carrier aviation presented. As of 1974 the Intruder was still in production at Grumman's plant on eastern Long Island. What

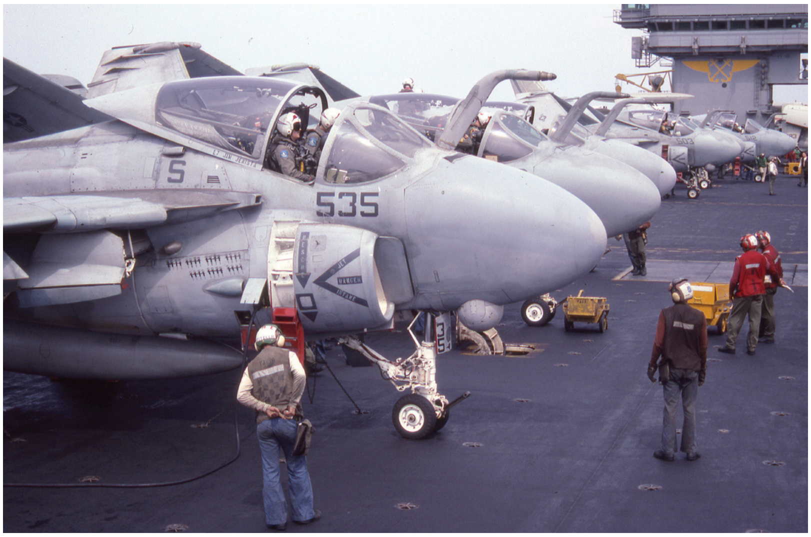
A 'Boomer' A-6E TRAM from VA-165 'sails' majestically over a cloud deck near its Whidbey Island home on 16 December 1993. NG 512 BuNo 159314 carries Mk 76 practice bombs as well as a buddy store on its centreline. The US Navy's Medium Attack community had only about three years left when this photograph was taken (*Author*) makes this point amazing is that, as late as 1968, US Defense Secretary Robert McNamara had reported to the US Congress that the A-6 would end production in 1970. In fact it would continue unabated for another two decades.

Within the US Navy, the number of A-6 squadrons grew from ten in 1974 to an apogee of 16 in 1987, with a pair of Naval Reserve units coming later. The Intruder led the air wing's transition from Vietnam-era Alpha Strike tactics to precision bombing that paid off in spades during Operation *Desert Storm*. Yet, in spite of this performance, the community would be completely dismantled within five years. On a broader stage, the A-6 community provided the leadership for a large part of US Naval Aviation into the next century, and even included the only Secretary of the Navy (SECNAV) with Naval Flight Officer wings. During this same period it also showed the way for NFOs as they proved their worth and rose to higher command.

The end of the Vietnam War led to the US Army and USAF largely going into garrison, even if in places like Korea and Germany. On the other hand, the US Navy was still driven by rigid deployment schedules where squadrons and ships were on a never-ending cycle of work-ups and training prior to leaving CONUS (Continental USA) on a carrier for six, or more, months at a time. US Navy aircrew who had the opportunity to participate in a USAF exercise like Red Flag at Nellis AFB, Nevada, usually viewed the event as a pleasant, short respite from their normal routine, and were typically surprised to hear from some of their Air Force counterparts that the two- to three-week trip to Las Vegas could be the longest they would be away from home in their three-year tour! That all changed for the other services with the commencement of Operation *Desert Shield* in August 1990 of course, but up until then six-month deployments were viewed as reality within carrier air wings.

Many Navy wives would tell you that the work-ups were harder on the family than the actual cruises because in the year prior to the deployment to the Mediterranean or western Pacific (WestPac) their husbands would be gone for up to half, or more, of the time. During this period they would be either working off the coast from their assigned carrier or conducting training at obscure places like Naval Air Station (NAS) Fallon, Nevada. Time away from the family took its toll. Divorce rates were frequently high – it certainly was not easy, and the wives rarely get the credit they are due for

In a scene repeated thousands of times on US Navy carriers over three decades, Intruder crews prepare for launch from *Theodore Roosevelt* in March 1991 during operations in the Red Sea. AJ 535 BuNo 155703 is from the 'Roadrunners' of VA-36, and it shows mission markings applied to its starboard engine intake during Operation *Desert Storm.* Two VA-65 aircraft are sandwiched between the VA-36 jets in this view, all six Intruders being manned up. CVW-8 embarked 20 A-6E for this combat cruise, with no KA-6Ds assigned (*Author*)



their part. The enlisted force dealt with the same issues and, as commonly stated, lived in ship's quarters that would be declared unfit for many incarcerated in a jail.

The US Marine Corps' A-6 units were in a similar cycle, typically with six-month periods away from home while preparing for or actually deploying to Japan. When they went to the boat they performed in an almost uniformly magnificent fashion, showing their professional abilities as Naval Aviators.

And then there is the EA-6A, which rarely gets the coverage it deserves. While the chapter on the aircraft in this volume is small, I hope I cover its post-Vietnam activities appropriately.

The Intruder has proven to be popular with hobbyists over the years for its varied plumage. The 30 aircraft I have selected for the profile section of this book represent a wide selection of markings without duplicating any we used in *Osprey Combat Aircraft 93 – A-6 Intruder Units of the Vietnam War*. We have tried to show a lot of different ordnance combinations as well as a range of colour schemes, with a mix of combat and peacetime markings. I think that Jim Laurier, once again, has done a tremendous job with his Intruder profiles. He deserves a lot of credit in faithfully taking care of my many comments on his work – therefore, any errors found in them should be referred to me and not Jim.

Likewise, I love Gareth Hector's cover work as he, yet again, dramatically depicted an Intruder in combat in its natural night environment.

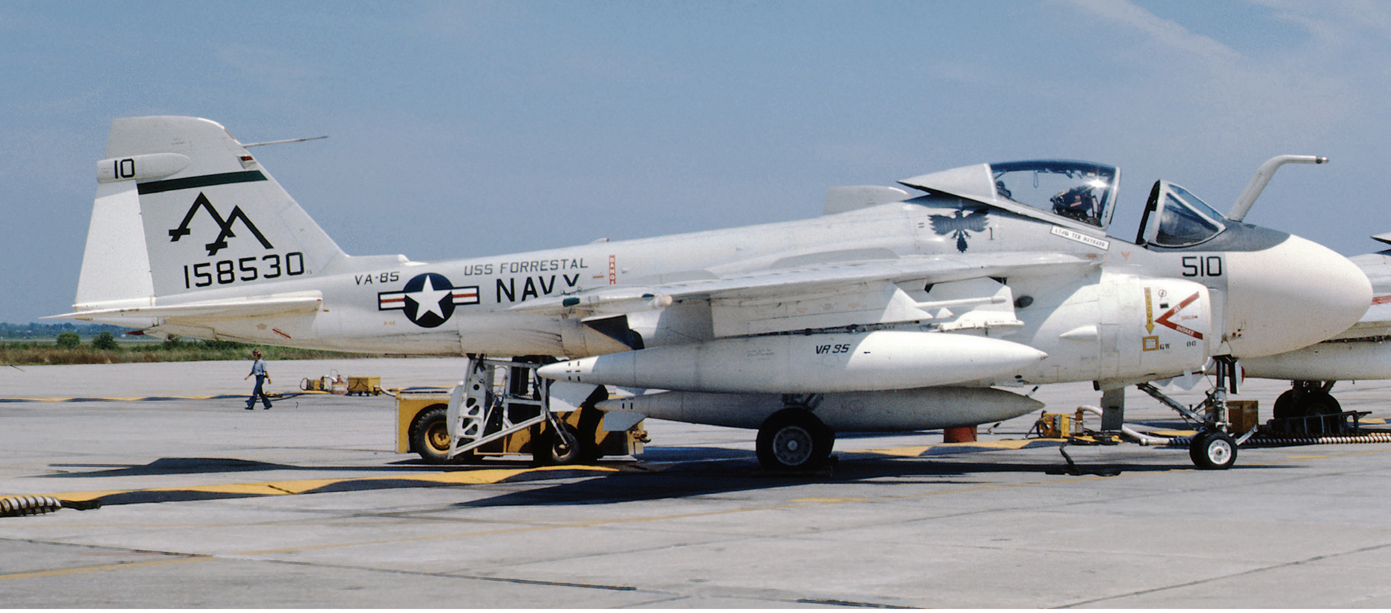
AUTHOR'S NOTES

Like my A-3 work (*Osprey Combat Aircraft 108 – A-3 Skywarrior Units of the Vietnam War*), I've tried to cover three areas in this book – the technical, the operational and the personal, because one does not work without the other. I also tend to write in the language of Naval Aviation and do so without apology. This is not the definitive history of the type, but I hope I've helped explain the A-6's post-Vietnam story in an affordable effort.

The organisation of this book shows the way the Intruder flew for its last 22 years, from Vietnam and the short peace that followed through the busy times that led to *Desert Storm* and, finally, the end of the entire Medium Attack community.

The men that flew and fixed the mighty Intruder remain my heroes. Here's hoping their sacrifice and accomplishments do not fade away anytime soon.

I wish to acknowledge the support of the following individuals during the writing of this volumes – Rear Adm Lyle Bull USN (Ret), Rear Adm Don Quinn USN (Ret), Rear Adm John 'J R' Haley USN (Ret), Capt Lou Lalli USN (Ret), Capt Steve Richmond, USN (Ret), Capt John Scrapper USN (Ret), Capt John Shorck USN (Ret), Cdr Peter Mersky USNR (Ret), Cdr Dick Nelson, USN (Ret), WO3 Chuck Berleman, USN (Ret), Lt Cdr Rick Burgess USN (Ret), Lt Cdr Tim Sparks USN (Ret), Capt Mark Morgan (MOANG, Ret), PHCS Bob Lawson USN (Ret), Steve Bulwicz, Bobby Kennedy, Dave Garvey, Troy Prince, Jim Rotramel, Bruce Trombecky, Michael Grove, Mark Aldrich, Phil Friddell, Frank McBaine and The Tailhook Association.



CHAPTER ONE

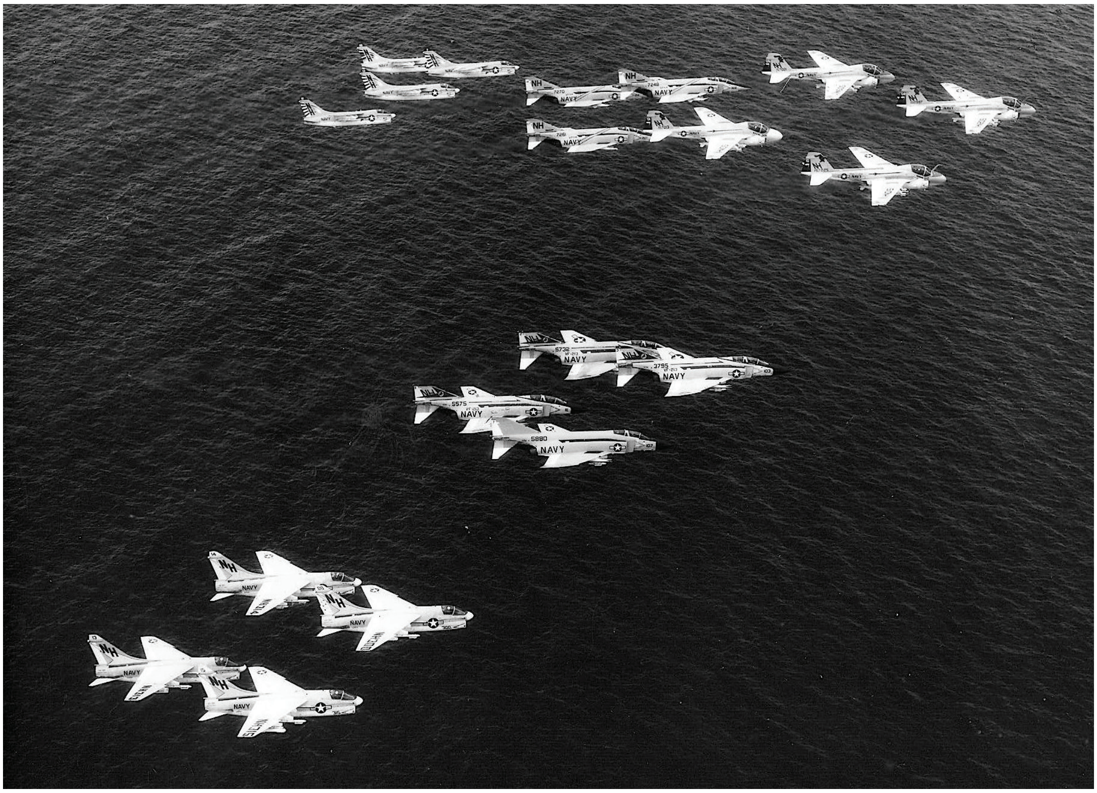
RETURN TO NORMALITY

VA-85 received the first A-6Es to reach the fleet in December 1971 at Oceana. The 'Black Falcons' would make the initial deployment with the type in September 1972 as CVW-17's Medium Attack squadron on board *Forrestal*. AA 510 BuNo 158530, wearing a dark green tail stripe and photographed at its home base in August 1973, was delivered as an E-model in early 1972 as only the 15th example of the new series. The aircraft would be lost whilst still serving with the unit on 6 July 1981 due to fuel contamination while flying off Sicily, both crew (including squadron CO, Cdr D A Wright) being recovered (*Bill Swisher, Tailhook Collection)*

As the calendar turned to 1974 the US Navy's carrier force was starting to recover from the residual effects of a long, contentious war in Southeast Asia. While it would take another year for US combat operations to truly cease in the region, the end of continuous deployments by multiple ships to the Gulf of Tonkin allowed the US Navy to slow things down to a degree, although it still had to deploy in a continuing fashion.

If there was one immediate change after almost ten years of combat in Vietnam it was the US Navy's rapid shift to re-focusing operations in the Mediterranean and Northern Atlantic as they looked again at the old Cold War threat of the Soviet Union. Seemingly neglected since the start of the war in Vietnam, the US Sixth Fleet had taken a back-seat for several years with some carriers deploying to the Mediterranean Sea with air wings that were both smaller in size and equipped with less capable aircraft. That was about to change.

Beyond all doubt, however, was the fact that the long war in Vietnam had established the Intruder as the 'main battery' of the Carrier Air Wing (CVW), being able to deliver more ordnance at longer ranges in a greater variety of weather conditions than any other aircraft in the US Navy's inventory. The service's 'Medium Attack' squadrons flying the Intruder could be found in all but two of its air wings and on all of its modern aircraft carriers from the *Midway* class.



The typical 'big deck' US Navy carrier air wing of the immediate post-Vietnam period is illustrated here by CVW-11's five fighter and attack squadrons in formation. The Intruders of VA-52 'Knightriders' are leading eight F-4J Phantom IIs (from VF-114 'Aardvarks' and VF-213 'Black Lions') and two divisions of A-7E Corsair IIs (from VA-192 'Golden Dragons and VA-195 'Dambusters') (*US Navy*)

Although at one time the Department of Defense had predicted the end of Intruder procurement as early as 1970, combat attrition as well as the aircraft's demonstrated capability would lead to production continuing for a further two decades.

As of 1974 the normal 'big deck' US Navy carrier air wing was made up of two Fighter (VF) squadrons flying the F-4 Phantom II, although the new F-14A Tomcat was also entering squadron service at Miramar. The three Attack (VA) units in each 'big deck' (*Midway* class or larger) air wing were subdivided as either Light Attack (noted as VAL) or Medium Attack (VAM). The light attack units at that point were almost entirely equipped with the single-engined/single-seat A-7 Corsair II. Medium Attack was still represented by the A-6 Intruder, with typically 12 to 15 examples in each air wing.

As of March 1974, inventories showed 359 total airframes in service (173 A-6As, 96 A-6Es, 57 KA-6D tankers, 11 A-6C TRIM, 14 A-6Bs for *Iron Hand* and eight NA-6As in the test world). At the same time the US Navy had 12 deploying Intruder squadrons and two training units. On the East Coast, A-6 units were based at NAS Oceana, Virginia, under the control of Medium Attack Wing One. The 'Green Pawns' of VA-42 operated as the Fleet Readiness Squadron (FRS, also called 'The RAG' after the obsolete term 'Replacement Air Group') supplying VA-34, -65, -75, -85 and -176 with trained aircrew and maintenance personnel.

The Pacific Fleet's home for Intruders was NAS Whidbey Island, Washington, with Medium Attack, Tactical Electronic Warfare Wings

US Pacific Fleet (MATVAQWINGPAC) acting as the administrative commander of FRS VA-128, fleet units VA-52, -95, -145, -165 and -196 and the entire US Navy EA-6B Prowler community. It also looked after the 'Arabs' of VA-115, forward deployed in Japan as part of CVW-5.

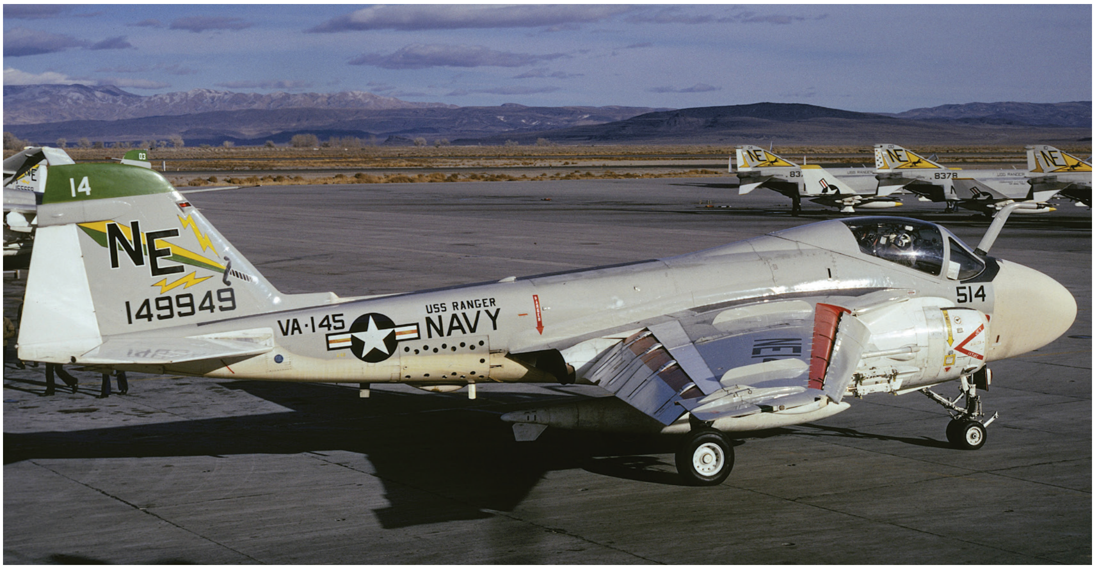
Finally, the US Marine Corps still operated six All Weather Attack (VMA(AW)) squadrons, a seventh having been deactivated in 1972.

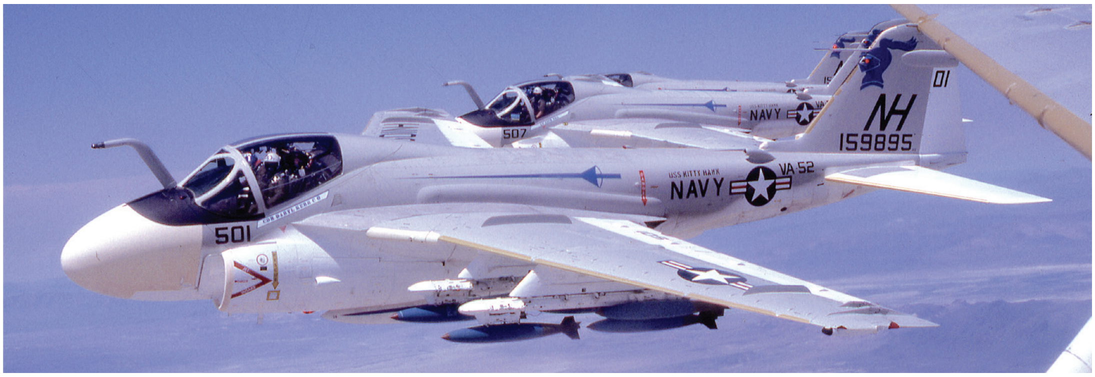
While the A-6A had done epic work in Vietnam (see the author's earlier volume *Osprey Combat Aircraft 93 – A-6 Intruder Units of the Vietnam War* for details), the US Navy had known for some time that it needed something better than the original model. What it got was the A-6E. The 'Echo' Intruder was the second true production version of the aircraft, being initially proposed by the wizards at Grumman in 1968 as the lessons of Vietnam combat filtered back to Bethpage. First and foremost, the US Navy requested that the new Intruder be more reliable than the A-model, with simplified systems wherever possible. Among the most obvious was that a single multi-mode radar, the AN/APQ-148, replaced the original design's separate search and track sets. The A-6A's ASQ-61 DIANE (Digital Integrated Attack Navigation Equipment) system was superseded by a more modern counterpart, and more powerful Pratt & Whitney J52-P-8B motors were installed, gaining about 800 lbs more thrust on each side as compared to the A-model.

The initial test flight of the E-model (undertaken by modified A-6A BuNo 155678) occurred on 27 February 1970, and the first new production aircraft, BuNo 158041, was delivered to VA-42 22 months later. The 'Black Falcons' of VA-85 gave the A-6E its fleet debut, undertaking the type's first deployment when it embarked with nine jets (along with a quartet of KA-6D tankers) on board USS *Forrestal* (CVA-59) for a Mediterranean cruise with CVW-17 from September 1972.

No A-6Es would see combat in Vietnam as the A-model (as well as Bs and Cs) finished out the war in Southeast Asia. The 'Echo' proved to be pretty much what was expected, with increased reliability and the promise

The A-6A and derivative A-6B remained in use with the fleet through to 1977, when they were completely replaced by A-6Es. NE 514 BuNo 149949 was one of only 19 B-models modified from A-6As during the Vietnam War. It was photographed by VF-21 Radar Intercept Officer Lt(jg) Jan Jacobs at NAS Fallon during CVW-2's December 1973 weapons detachment. The aircraft was a 'Mod 0 Upgrade' A-6B – two of the model's distinguishing external modifications are barely visible here, namely a small black, rearward facing antenna on the trailing edge of the horizontal tail and a diamond-shaped array just aft of the intake. At this time VA-145 only reported two Standard ARM-shooting A-6Bs within its ranks, along with eight A-models and five KA-6Ds. BuNo 149949 would later be modified to A-6E standards and survive through to retirement in 1993 (*Lt(jg) Jan Jacobs*)





A division of VA-52 'Knightriders' jets fly off a squadron KA-6D high over the Carson Sink during the CVW-15 Fallon detachment in July 1976. These are A-6E CAINS aircraft, as noted by the off-colour metal plate under the nose – the location reserved for the upcoming TRAM system. They are carrying inert Mk 82 bombs for the range. The lead aircraft, NL 501 BuNo 159895, which is marked up as the jet assigned to squadron CO, Cdr Daryl Kerr, would be lost with VA-85 on 22 March 1993 after crashing on takeoff from Fallon, with both crew ejecting (*Ens Mark Morgan*)

of growth as new technologies appeared. Well over 200 A-models would subsequently be modified into A-6Es in one form or another, and many new ones would be built as well. The next major improvement to the breed would be in the form of the A-6E CAINS (Carrier Airborne Inertial Navigation System), with its greatly improved navigation capability. The new INS provided a much tighter navigation system than the Doppler in the A-model, although it was required to be connected to the ship via a cable to initiate its system prior to flight. This too would improve through the years as radio transmitted and even in-flight alignments were developed.

CAINS was only an interim step, however, as the goal was to introduce an all-new targeting system that would feature a turret under the nose which contained infrared sensors and a laser designator. The entire package, soon called Target Recognition Attack Multi-Sensor (TRAM), provided the Intruder with a system that was much better than the previous A-6C TRIM, particularly in terms of size and weight. It also proved to be greatly superior to the AVQ-10A laser designation pod (designated *Pave Knife*) that had seen limited combat with VA-145 at the very end of the Vietnam War.

Under the direction of a number of combat-experienced Intruder aviators working in Washington, D.C., including then-Lt Cdr Lyle Bull, TRAM also preceded parallel efforts by the USAF to put similar capability in its counterpart, the General Dynamics F-111. The initial A-6E TRAM flew at Grumman's Peconic Field on 22 March 1974 and went right into test. VA-42 received the first one for training in December 1978, which was remarkably quick considering the cost of the programme and the drastically reduced post-war defence budgets during this period. Deliveries of new and modified aircraft would take several years to complete.

Through it all, Grumman continued to crank out between six and twelve new Intruders from its Calverton, New York, plant every year alongside F-14s, EA-6Bs and E-2Cs. The 693rd, and final, A-6 was BuNo 164385, which joined VA-95 in 1992. Including EA-6As, a total of 720 Intruders would be built.

UNDERWAY

With peace at hand and the resulting reduction in operational funds, deployments to the Mediterranean became almost low-key as ships spent as much time in port at places like Naples, Malaga, Monaco and Athens as they did underway. As remembered by one carrier vet, 'There were periods where we had to put back out to sea to retain qualifications and also because most of us were out of money. Some guys flew their wives or girlfriends over to follow the ship around and it was common to get a week off in the middle to tour Europe. Things were definitely more relaxed at this point.'

The primary 'threat' was viewed to be the Soviet Navy, with both submarines and surface ships being tracked. There was usually a Soviet 'tattletale' trailing the carrier while underway as well, a frigate or intelligence vessel that constantly monitored and reported the position of the US 'Bird Farm'. A secondary issue in the Mediterranean was watching the constant tensions between Israel and its Arab neighbours.

The attack squadrons remained constant through the 1970s as other parts of the air wing changed. USS *John F Kennedy* (CV-67), for example, hosted CVW-1 which included the first F-14 Tomcats and S-3 Vikings to deploy to the Mediterranean in 1975, and EA-6B Prowlers were being assigned to most wings. In the Pacific things settled down as the US Navy dealt with the aftermath of the Vietnam War. The Whidbey-based squadrons continued to deploy to WestPac, with a strong depth of combat experience and leadership flowing throughout the ready rooms, Chief's quarters and maintenance shops. In the end, the years immediately following Vietnam proved to be only a short respite as the US Navy entered a new period of combat, with the Intruder being heavily involved.

On 5 October 1973 the 'Arabs' of VA-115 deployed from Alameda, California, in USS *Midway* (CVA-41) with the rest of CVW-5. What made this departure unique was that the ship was moving permanently to a new home port of Yokosuka, Japan, thus becoming the first US Navy carrier to 'forward deploy' in this fashion. For VA-115, it would be another 23 years before they returned home to CONUS for anything other than temporary training. Most Intruder squadrons carried out from four to six major deployments between 1974 and 1980. During this period US Navy Intruder units made more than 45 major cruises to the Mediterranean, Northern Atlantic, Western Pacific or Indian Ocean, and this figure does not include the forward deployed status of *Midway* in Japan, where 'every at sea period was operational'.

The last A-models were replaced by A-6Es in Commander, Air Forces, Atlantic (AirLant) in 1976, with VA-176 making the final Mediterranean deployment with the type. They lasted only a year longer in Commander, Naval Air Forces, Pacific (AirPac), with *Midway*'s VA-115 receiving 'Echoes' in the

Intruder in the Groove. A VA-115 A-6E on final approach to *Midway* in a 1980 photograph taken through the B/N's windscreen. The Fresnel Lens datum ('meatball', located amidships on the port side) is a whole cell too high in this shot and the pilot is busy working on 'meatball-lineup-angle of attack' as he tries to look good coming aboard (*US Navy*)

summer of 1977 to mark the end of fleet service for the A-6A/B – the last examples were ignobly carried home to CONUS on the back ends of amphibious ships.

The disestablishment of CVW-19, with its unique three light attack squadron configuration, in 1975 meant that all of the US Navy's carriers and air wings now included Intruders – a state that would last for another 19 years. On 16 July 1975 VA-35 and CVW-8 departed Norfolk on board USS *Nimitz* (CVN-68), only the second nuclear-powered carrier in the fleet (after USS *Enterprise* CVN-65) and the first of ten in its class. Four years later, in January 1979, the US Navy's third nuclear-powered aircraft carrier, the USS *Dwight D Eisenhower* (CVN-69), made its initial trip to the Mediterranean, with CVW-7 and VA-65 embarked. More would soon arrive.

ACTION OVER CAMBODIA

For the immediate period following the end of the Vietnam War, Pacific Fleet carriers still operated off of the Indochina coast and watched as South Vietnam, inevitably, collapsed. When the North Vietnamese forcibly 'reunified' the country under one flag in April 1975, US Navy ships could only stand by and watch. Although the resulting rescue of men, women and children trying to escape the onrushing communists did not directly involve the Intruders present, it still proved a bitter pill for almost all of the aircrew, many of whom had been involved in years of combat over the same country.

USS *Coral Sea* (CVA-43) had deployed to WestPac from Alameda on 5 December 1974 with CVW-15 embarked. The Medium Attack component was represented by the 'Green Lizards' of VA-95, which was making only its second cruise since being established as an Intruder unit in April 1972 – the squadron had flown A-4 Skyhawks in a previous life. 'Lizard-ONE' was Cdr Van Westfall, who had been designated as a Naval Air Observer in January 1957, flying AD-5Qs before moving to A3Ds at Whidbey. He transitioned to Intruders late and took command of VA-95 in April 1974 as one of the early A-6 NFO commanding officers. Highly regarded by both seniors and subordinates, Westfall was viewed as 'tough but fair' by practically everyone that worked with him.

The squadron left Whidbey with ten A-6As and five KA-6Ds on what was ostensibly a 'peacetime' cruise but with CVA-43 actually expecting to spend a lot of time off Vietnam as it fell apart. Once in-theatre the ship joined the US presence that watched as North Vietnam completed its consumption of the South, which led to the evacuation of US citizens and allies in Southeast Asia under Operations *Frequent Wind* and *Eagle Pull*. While armed American aircraft flew over Vietnam during this period, none are known to have dropped ordnance. One member of the 'Lizards" ready room was Lt Steve Richmond, who had earned his 'Wings of Gold' at NAS Kingsville, Texas, in 1966 and had flown two Intruder combat tours through 1970 with VA-196. With more than 180 combat missions under his belt, he served as an instructor at the RAG and then detached to get a degree at the Navy school in Monterrey.

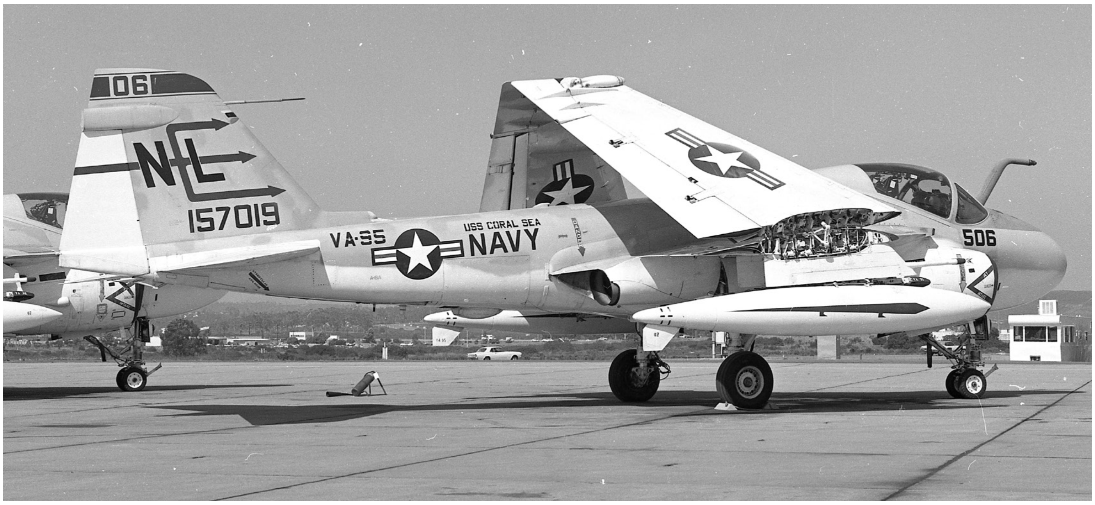
Richmond returned to Whidbey and joined VA-95 in time for the unit's next deployment in *Coral Sea*. 'We knew that the war was winding down and that we'd probably spend time off Vietnam watching what happened,' he recalled.

With Vietnam finally reaching its sad end, *Coral Sea* detached and started heading south for a port call in Perth, Western Australia, with Rear Adm R P Coogan, Commander Task Force 77, now embarked. Crossing the equator, the ship held the traditional 'Crossing the Line' ceremony and then continued south to visit 'Down Under'. A couple of days later, Lt(jg) Bobby Miller, a nugget 'Lizard' pilot and University of Mississippi graduate, took a morning walk in the hangar bay and noticed the sun was rising on the starboard side of the ship – this meant they were now headed back north. The ship's CO soon told his crew that patrol boats of the Khmer Republic, the violent regime that had taken over Cambodia, had seized the US-flagged containership SS *Mayaguez* along with its crew. *Coral Sea* had been tasked to move at best speed to assist in the recovery of the men and their vessel.

By the time CVA-43 arrived on scene on 15 May 1975, US Marines had been inserted on Koh Tang Island, near the anchored location of the *Mayaguez* and where the ship's crew was believed to have been held. Instead, the landing party found a Khmer force that was larger than anyone had anticipated, with heavy ground combat ensuing. The ship and CVW-15 had entered a fluid situation that would be heavily influenced by direct control from the other side of the world, all of which helped lead to confusion and rapidly changing commands. 'Intel was very limited on what we could expect,' Miller explained. 'Our initial plan was to carry Mk 82 Snakeyes and Mk 20 Rockeye to provide Close Air Support [CAS] for the Marines on the island.'

The first event to depart *Coral Sea* on what was described as 'armed reconnaissance' launched at 0700 hrs on the 15th but was quickly recalled on orders from Washington, D.C. as they dealt with conflicting information in a confused tactical situation. An hour later another launch had Steve Richmond in the lead 'Lizard' jet with Lt(jg) Jim Kennedy in NL 506 (BuNo 157019) and NL 511 (BuNo 157025) with Miller and his Bombardier/Navigator (B/N), Lt Cdr Butch Engwell, the squadron Operations Officer, on their wing. 'Butch had told me we wanted to be

VA-95's A-6A NL 506 BuNo 157019 was flown by Lt Steve Richmond and Lt(jg) Jim Kennedy during their strike on Ream Field, in Cambodia, on 15 May 1974. It is shown here just prior to cruise at NAS North Island (*Bill Swisher, Tailhook Collection*)



on the second launch because the first one never does anything,' Miller stated later. As 'Ops O', he had written the flight schedule accordingly.

The section quickly checked in with the USAF C-130 controller 'Cricket', who was busy working USAF aircraft (AC-130s, F-111As, F-4Ds and A-7Ds) shuttling out of Thailand to work over the island. After at least two calls they found themselves still orbiting with no apparent interest from the USAF controller, which is when a very loud transmission was heard on Guard frequency – 'Lizard Flight this is "Jehovah". Switch to Covered 10.' It was Rear Adm Coogan, telling them to go to a different, encrypted, radio channel for instructions. The Admiral came up and directed them to attack Ream Field, with coordinates being provided by the Flag. As Bobby Miller put it, 'at this point I was glad we were not the flight lead because we were about to go somewhere we had never heard of to bomb a target we had not briefed'.

Their target was actually a facility located near the coast, well southwest of the capital of Phnom Penh, and would later be known as Sihanoukville International Airport. Unknown to the aircrew involved, *Coral Sea* had been directed by Washington to neutralise any potential threat at Ream, which might have included T-28s and possibly MiG-17s.

In NL 506, as the flight lead, Richmond 'asked my B/N at least three times if he had the right coordinates for the target. I really didn't have to worry though as "Pinky" had everything under control on his side,' Bobby Miller recalled, 'We flew on Steve and Jim's wing and let them figure it out while my B/N had a big chart out over on his side of the cockpit.' As they approached the airfield at medium altitude (8000-10,000 ft) Richmond gave a quick brief to his wingman on what he wanted to do – make two passes, one dropping Rockeye on any aircraft present and one using the Mk 82s to crater the runway. Richmond's first run was a standard 40-degree dive with a 5000-ft 'pickle' and pull-off, jinking to avoid AAA, as learned from experience in Vietnam.

'We got there pretty quickly and set up in a left-hand visual dive bomb pattern, not using the retarded mode of the Snakeyes,' Miller explained. 'It appeared as if someone else [CVW-15 A-7Es, which had apparently been tasked separately] had been there before us as there was already smoke coming up from the field. We were behind Steve when Jim and I looked around and noticed yellow-orange flashbulbs going off from the perimeter of the field. I thought to myself "Is this what it is like to be shot at?" All doubts were erased when there was an orange flash with a lot of black smoke in front of and over us, which we flew under. After our first run we climbed back to 8000-10,000 ft and Butch said politely that I needed to move the aircraft more off target. He was exactly right. After the next drop I turned and pulled about as hard as I could coming off target. Butch said, "That's better." Not all of our bombs came off on the second pass, so we had to fly one more while Steve waited for us.'

Their raid led to the confirmed destruction of a C-47 transport, with a second damaged, as well as numerous secondaries and fires on the field. As Steve Richmond put it, 'although we did receive some AAA, it wasn't nearly as bad as I'd seen in Vietnam with VA-196'.

About the time the VA-95 jets were going feet-wet, a very loud voice came up over the Guard frequency emphatically telling them to 'STOP

BOMBING!' It was the USAF controller, who demanded to know who had authorised the US Navy to fly over land and bomb Cambodia itself. Steve Richmond calmly told them that they had been re-directed by their Flag ('Jehovah') and that they could take it up with him. The 'Lizard' section subsequently recovered aboard *Coral Sea,* although NL 511 had an unsafe gear indication on downwind and had to use the emergency blow-down system to get three 'down and locked'. 'I still got the only OK-3 pass [the best possible landing grade] of my career,' Miller proudly recalled. The 'Lizard' section was called onto the flag bridge immediately upon return and praised by Rear Adm Coogan for their work and initiative.

A second strike was launched at 1020 hrs, with aircrew from a section of 'Lizards' and a pair of Corsair IIs being shown only a solitary 8 x 10-in black and white photograph of the Khmer Navy facility near Kompong Som for target recognition during the briefing. It was assumed that this was where the patrol boats that had intercepted *Mayaguez* had come from. The lead aircraft was flown by XO Cdr Jerry Rogers, with B/N Lt(jg) Terry Toms. Lt Cdr John O'Brien and Lt John Shorck were in the other aircraft (BuNo 156996). Shorck explained, 'We flew flak suppression while the other aircraft hit a barracks mid-base. Our run was a standard 40-degree dive with Mk 82s, the lead jet using Rockeye on its target. The entire event took two hours.'

At 1145 hrs an additional event was flown in support of the Marine withdrawal from Koh Tang Island, and this lead to the destruction of a patrol boat by an A-7E. All aircraft were back aboard *Coral Sea* by 1335 hrs.

A total of 289 Marines had been inserted onto Koh Tang Island. The crew of *Mayaguez* was eventually released. By the time the landing party was extracted from Koh Tang, 18 Marines and Air Force aircrew had been lost and several USAF H-53 helicopters destroyed. Three Marines left on the island were eventually executed by the Khmer Rouge. Although *Mayaguez* and its crew were returned, for many it was a poorly handled operation blighted by indecision, micro-management from far away and the unnecessary loss of men and equipment.

VA-95's short, sharp day of combat in May 1975 would be both that Intruder squadron's baptism of fire with the jet, as well as the last time the Vietnam-proved A-6A would be involved in combat. Eight years would pass before Intruders saw action again.

NEW BLOOD

With the Vietnam War over, a whole new generation of Intruder aircrew graduated from the RAG and joined the fleet. These junior officers would fill out ready rooms fleet wide and eventually make their own mark on the community. One of the first, in 1973, was young NFO Lou Lalli. A graduate of Merrimack College in Massachusetts, Lalli had been impressed with the Intruder while going through training and had turned down a chance to fly fighters for Medium Attack. He reported to VA-42 and was immediately taken with the level of talent he was surrounded by. 'The ready room was full of guys out of Vietnam, men with Silver Stars, DFCs and Air Medals. I immediately knew this is where I belonged.'

505
DANGER
INTAKE
JET

Lt(jg) Steve 'Bull' Bulwicz poses on the boarding steps of a VA-145 A-6E while manning up for a launch off *Ranger* during the squadron's 1979 WestPac deployment. The load is live Mk 82 bombs for this flight. 'Bull' represented the new blood that entered the A-6 community after Vietnam and epitomised the capable, yet frequently irreverent, junior officer that every good squadron ready room has in it (*Steve Bulwicz*)

Lalli completed the syllabus and was assigned to the 'Black Panthers' of VA-35, which would end up being the only squadron he would ever deploy with. He would make his first deployment flying new A-6Es from USS *America* (CVA-66).

A 1978 arrival to the Intruder community was Lt(jg) Steve Bulwicz. A typical irreverent 'JO' (junior officer) for the period and imbued with a remarkably dry wit, 'Bull' Bulwicz, a New Jersey native, received his commission via the Aviation Reserve Officer Candidate programme after graduating from New Jersey City University. Earning his wings at Kingsville, he wanted 'anything with two motors' after surviving an engine failure in a TA-4 Skyhawk. Requesting RA-5C Vigilantes, Bulwicz got Intruders instead and was directed to Whidbey Island and VA-128. Following his time with the RAG he was ordered to the 'Swordsmen' of VA-145, where he began preparations for deployment on board USS *Ranger* (CV-61). Bulwicz remembered;

'VA-145 was a good squadron with excellent leadership and a great ready room. By the time I'd got there they'd just turned in their A-models for Es and the older guys were really happy with the new aircraft as they fixed a lot of the problems of the earlier version.

'Cruise [in 1979] was great. We went to Hawaii and Cubi [in the Philippines] and then the ship managed to hit an oil tanker in the Strait of Malacca the first night out of Singapore. I'd just come off of Integrity Watch [where a Junior Officer sits in flight deck control and, with a crew of enlisted men, monitors the security of aircraft while not at flight operations] and had just gone to the rack when the collision alarm went off. All I could think of was how stupid it was to have a drill at 0230. A shudder ran through the whole ship when we hit the tanker MV *Fortune*. They then sounded General Quarters and we spent the next few hours trying to disengage from the ship embedded in our bow. We ended up going back to the Philippines for repairs and then Japan for heavy repairs, losing about eight weeks of operations in the deal. Still had a lot of fun though.'

Bulwicz went on to be a TA-4J instructor pilot with VT-86, training student NFOs. He then left the US Navy and joined the Reserves, where he flew A-7Bs with VA-304 from Alameda. Returning to active duty, he flew two tours in EA-6Bs before departing again and becoming an airline pilot with Horizon, Northwest and then Delta.

MORE PUNCH

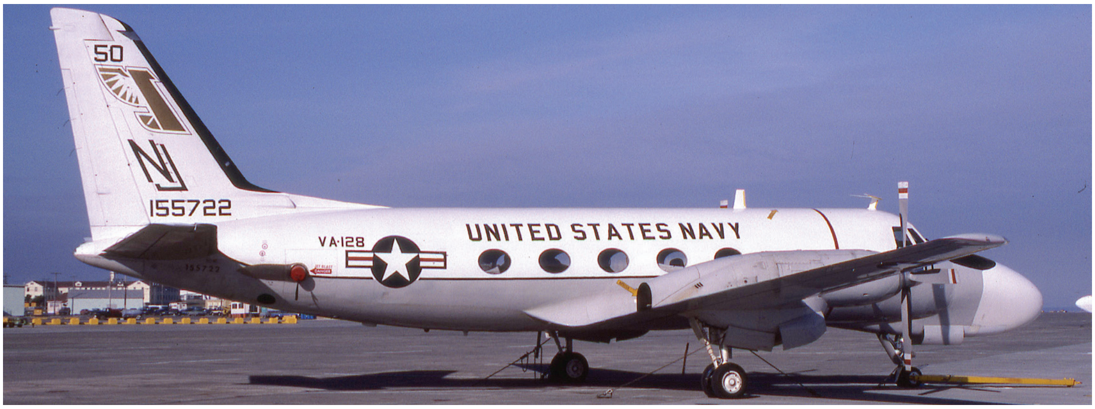
During Vietnam the Intruder had made a name for itself with the amount of bomb tonnage it could employ. Among other qualities, the aircraft's ability to carry 28 500-lb bombs was widely advertised as 'being greater than a B-17'. The type was also central to 'Alpha Strike' tactics that emphasised large numbers of aircraft delivering a lot of unguided (ballistic, or 'dumb') weapons on a single target. By the end of the Vietnam conflict the A-6 was at the forefront of new 'precision' (or 'smart') weapons delivery with Laser Guided Bombs (LGBs) made possible through A-6C TRIM aircraft or A-6As carrying *Pave Knife* designator pods.

While air wings would continue to practise 'mass gaggle' Alpha Strikes through to the late 1980s, the arrival of new precision weapons signalled a sea change from 'many bombs – or aircraft – on one target' to what would eventually become 'one bomb/one target'. The change did not come easily, but advances like TRAM quickly made LGBs the preferred weapon for many target sets. It did not stop at the water's edge either, as the renewed post-Vietnam emphasis on 'War At Sea' (WAS) quickly led to the not-so-secret realisation that the US Navy really did not have an appropriate set of weapons that could deal with improvements in Soviet Navy air defence. New Soviet warship designs featured SAM systems that could reach out well over 20 miles, with much greater ranges promised soon. Even with EA-6B jamming support, the prospect of Intruders and Corsair IIs arriving overhead to rain 'dumb' bombs on these ships in World War 2 fashion was highly unlikely. A new stand-off, ship-killing weapon had to be developed and deployed.

The criticality of acquiring an anti-ship 'cruise missile' was demonstrated on 21 October 1967 with the destruction of the Israeli destroyer *Eliat* (formerly HMS *Zealous*) by Egyptian CSS-N-2 'Styx' missiles fired from *Komar*-class patrol boats. By 1970 the service had engaged McDonnell Douglas to develop the Harpoon, a sea-skimming, active-radar homing weapon that would be deployed in 1977 in air (AGM-84), surface (BGM-84) and sub-surface (UGM-84) launched versions. The Intruder would introduce the new subsonic missile to the fleet by 1977, and it would remain an important weapon over the years. Meanwhile, the AGM-53 Condor, a larger, faster and more capable missile (as well as more complex and expensive) was subsequently cancelled in favour of the Harpoon.

The desire to have a cheaper precision weapon available for the anti-ship mission led to the rapid development of AGM-123 Skipper II at China Lake. The Skipper featured a Mk 83 1000-lb LGB mated to a rocket motor from the AGM-45 Shrike. The rocket gave it enough stand-off capability to engage small boats and ships while also providing more target selectivity than Harpoon – the laser guidance allowing the B/N to select a specific point of impact

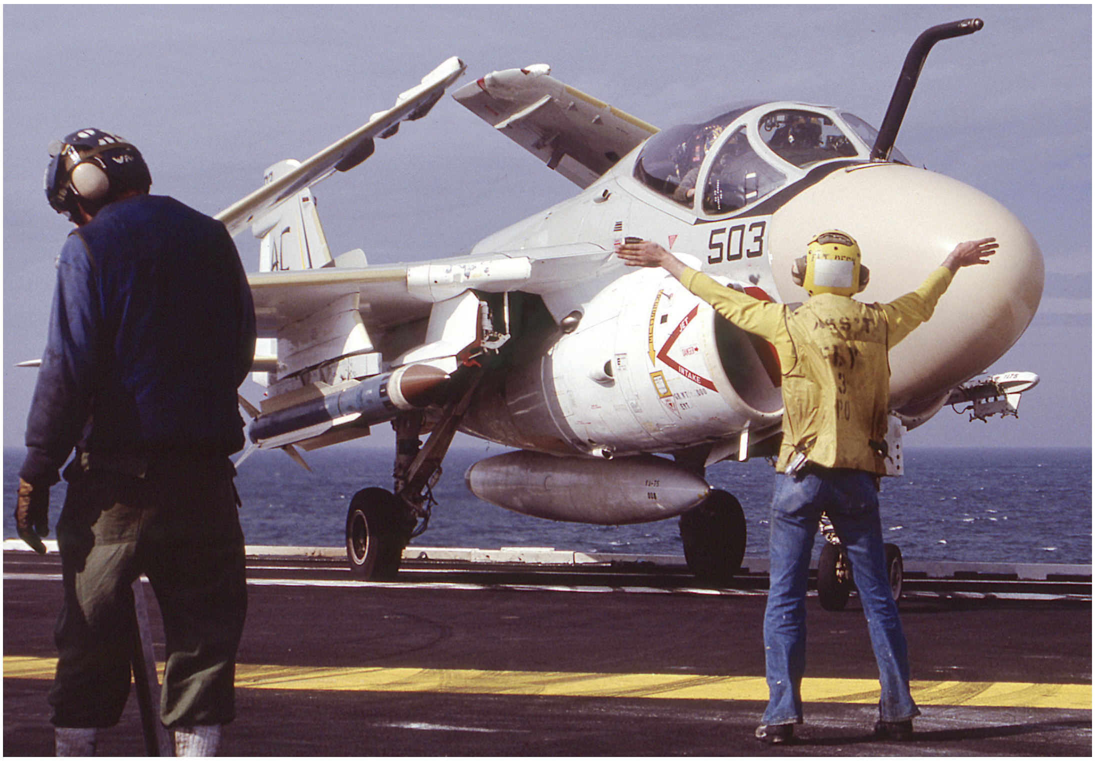
Vital to aircrew training done at the RAGs were the TC-4C Academes, nine of which were built by Grumman from the civilian Gulfstream I. The turboprop-powered aircraft had a replica A-6 cockpit in the fuselage, where students could train with instructors looking over their shoulders. Introduced in 1967-68, the Academes lasted until the end of A-6 RAG operations. NJ 850 BuNo 155722 was photographed at Whidbey Island in February 1985 while assigned to VA-128. VA-42 and VMAT(AW)-202 flew these aircraft – nicknamed 'Ticks' by Naval Aviators – as well (*Author*)



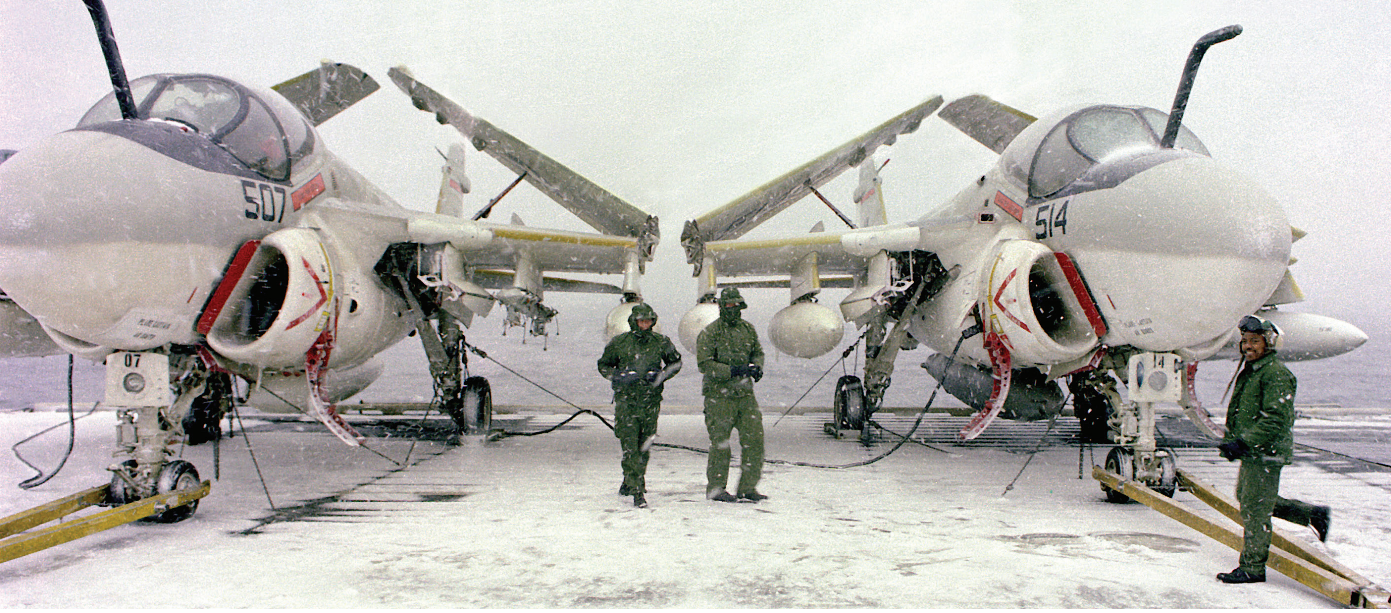
while the Harpoon's radar guidance homed in on whatever return it saw. The Skipper entered service in 1985 and would be used in several future conflicts.

In the *Iron Hand* arena, the A-6B had proven itself to be the most capable counter-SAM aircraft flown by the US Navy during the Vietnam War. While all Intruders could carry the AGM-45 Shrike, the B-model was the only version that could use the larger and longer-ranged AGM-78 Standard anti-radiation missile (ARM). With the retirement of the A-6A and B inevitable in the mid-1970s, Naval Air Systems Command (NAVAIRSYSCOM) developed the AN/AWG-21 system to put in a small number of A-6Es so that they could continue using the AGM-78 'STARM'. With only ten jets modified (and known in the fleet simply as A-6E AWG-21 aircraft) accordingly, they were split between the two fleets for use. AirLant typically sent two or three out with each deploying squadron, while AirPac assigned all of its examples to VA-115 in Japan. As the breed improved the US Navy subsequently modified eight A-6E TRAMs from 1980 to replace the original AWG-21 aircraft. Once again, in AirPac they were assigned to VA-115 before moving to VA-145 in 1986. AirLant continued to rotate its few airframes among deploying units.

The 'STARM' aircraft lasted until 1988, when the missiles themselves reached the end of their propellant shelf lives. By that point the new and much more capable AGM-88 High Speed Anti-Radiation Missile (HARM) was being deployed by A-7Es, F/A-18s and soon EA-6Bs in both fleets. While Intruders lost the 'STARM', they continued to carry the AGM-45 Shrike, which would eventually be used in *Desert Storm*. In time the A-6 would gain the HARM as well, but that was several years down the path.



With the retirement of the A-6B *Iron Hand* jets, the US Navy equipped ten A-6Es to shoot the AGM-78 Standard ARM in 1978 by installing the AN/AWG-21 system. VA-75's AC 503 was one of these aircraft, and it is seen here with a practice 'STARM' hanging on station five whilst being directed by a yellow shirt on board *Saratoga* in 1980. These aircraft were externally identical to the normal A-6E CAINS, and they were themselves replaced by eight TRAM aircraft fitted with the same equipment in 1980-81 (*Bob Lawson photo*)



CHAPTER TWO

DRIVE-BY STRIKES

Although they called it 'All-Weather Attack', some conditions were definitely more challenging than others. This pair of VA-196 Intruders sit on the snow-covered deck of *Coral Sea* between flights. When this photograph was taken the ship was swinging through the Bering Sea off Alaska at the start of its 1983 'Around the World' cruise as it transferred to the Atlantic Fleet. 'Milestone 507' BuNo 157017, on the left, is an A-6E CAINS, while 'Milestone 514' BuNo 151592 is a KA-6D (*US Navy*)

Throughout the Vietnam War the US Navy had used the same aircraft paint scheme of gloss light gull grey over white that it had adopted in 1956. While the USAF had gone to camouflage for its tactical aircraft early on in the conflict, the US Navy seemed to revel in bright, vivid paint schemes where some squadrons tried to out-do each other in the spectacular use of colour. The message was clear – 'We don't care what you see. Come and get us.'

That all changed in the late 1970s when Naval Aviation came to the conclusion that being less visible was probably not a bad idea. Within the fighter community it was realised that delaying visual detection offered a serious advantage in the aerial arena against both air and ground threats. The shift in thought quickly went fleet-wide. It therefore started a multi-year campaign to reduce the visual signature of its aircraft. What the service ended up with was named Tactical Paint Scheme (TPS), which was codified in the document Mil-STD-2161(AS) 'Paint Schemes and Exterior Markings for US Navy and Marine Corps Aircraft'. The long-standard grey and white aircraft finish was replaced by TPS, which was described as 'a color scheme to reduce visual detection comprised of shades of flat gray with exterior markings in a contrasting shade of gray'.

As originally mandated, the Intruder received a two-tone dull grey motif in Federal Specification (FS) shades 36320 and 36375. The instruction also specified that all other markings *had* to be in the opposite colour, which meant, at least initially, an end to the full-colour schemes that had graced carrier aircraft since the mid-1950s. While there was a proviso for painting no more than one aircraft per squadron (suggesting a 'CAG bird' or 'Easter Egg') with squadron markings in full colour, it had to be approved by the local Type Commander, who was not always agreeable. KA-6Ds were specifically authorised to keep the existing grey and white scheme in order to aid tanker recognition, although some Oceana units actually re-painted a small number of KA-6Ds into overall grey on their own initiative in the mid- to late 1980s.

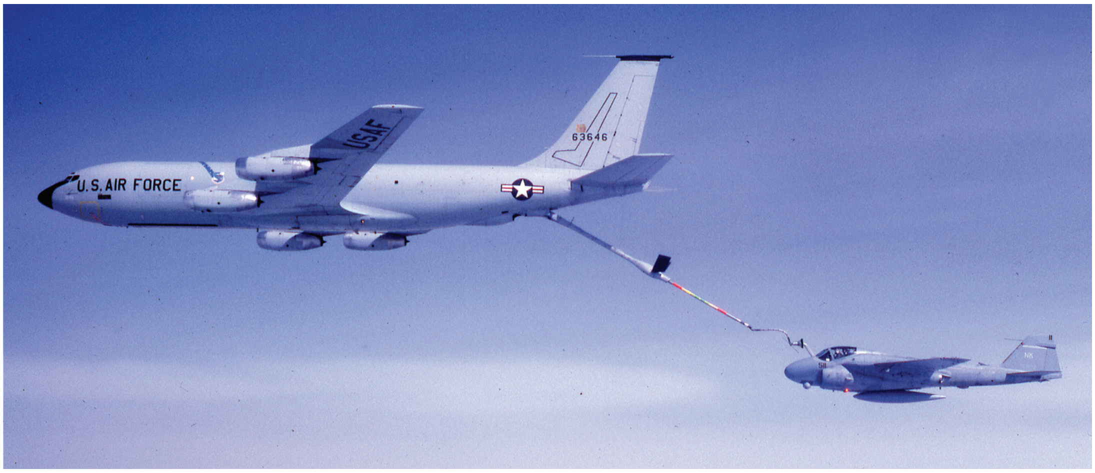
The narrow limits of the direction soon caused issues in the fleet as freshly painted aircraft quickly weathered under the sun and salt-air environment and the dull paint had a habit of seemingly absorbing dirt. The result was aircraft turning into an ugly mass of blotched greys and light blues as squadron corrosion shops worked hard to keep up with their work using whatever paint they could find. As was commonly stated in the fleet, 'if the aircraft don't come home from cruise looking awful then you're not doing your corrosion work right'. Over time the TPS instruction was modified to reflect reality in that side numbers were soon changed to black or very dark grey, as the original shades faded into each other. Improved paint quality and application methods eventually helped the overall look of US Navy aircraft so that by 1990 the 'leper' appearance was greatly reduced and small areas of colour were tolerated by higher authority for safety or morale purposes.

'HAZE GRAY' AND UNDERWAY

By 1980 the nation had been largely at peace for almost seven years. This started changing as new threats emerged and evolving US foreign policy moved towards applying limited force on specific targets, frequently using the military to achieve political goals in a Clauswitzian sense.

Within the US Navy the term 'drive-by strike' was coined for those raids that typically lasted only one day, where sustained military operations were neither needed nor desired. Not surprisingly, the service's deployed carrier force was perfect in this role. It was during this period that the noted point

During the mid-1980s Naval Aviators started training regularly with USAF 'big wing' tankers in order to understand Air Force procedures and the challenges of duelling with the KC-135's hard 'Iron Maiden' refuelling basket, which was much trickier to deal with than the soft US Navy basket they were used to. This familiarity would pay off later during *Desert Storm*. Here, a virtually anonymous VA-196 A-6E is plugged into KC-135A 56-3646 from the 92nd Bomb Wing (BW) while over central Washington on 28 April 1984 (*Author*)



Occasionally referred to as the US Navy's 'Foreign Legion', CVW-5 remained forward deployed with *Midway* from 1973 through to 1991. Here, VA-115 A-6E NF 511 BuNo 159579 is launched off cat two with a load of Mk 76 practice bombs on the centreline in 1981 (*US Navy*)

was made that whenever trouble arose in the world, the first thing the President famously asked was 'Where are the carriers?' And the Intruder had a critical role in this effort. The rise of certain nations and specific non-state actors hostile to the United States in the 1970s drove a rapid change to the way the fleet deployed. The days of ships spending more time in port than underway was over and air wings began to look at potential enemies other than the Soviet Union. According to one retired A-6 B/N;

'Every carrier that chopped to Sixth Fleet [in the Mediterranean] prepared detailed folders on a variety of potential targets throughout the region, typically focusing on what were now being regarded as "terrorist" nations. Most had to be briefed up to the flag level for approval, with some of them involving strikes deep into certain countries – so deep it was going to be Intruders only as the F-14s and (later) the F/A-18s didn't have the range.'

Targeting was also improved as the new generation of 'smart' weapons, soon combined with the A-6E TRAM, provided options that had never been available before. As one senior A-6 pilot put it, 'where we used to have to take a division of Intruders with racks of Mk 82s each, we now planned for LGBs, where one or two aircraft could do the same job'. Specifically, where strike planners once had to count on a string of 'dumb bombs' to take out a target, they were soon talking about which specific window of a building they were going to put their LGBs through to achieve the desired effects. Nonetheless, the Mk 82 and Mk 20 Rockeye retained utility for many target sets, and would remain in the Intruder's weapons lockers until the end.

One of the first international crises that had to be monitored was the Iranian Revolution, which had been brewing for years as the US-supported Shah of Iran dealt with ever increasing civil disruption. Suddenly, the Indian Ocean ('IO') became relevant, and ships started routinely deploying in this region. The first carrier to conduct flight operations from what would soon be known as 'Gonzo Station' (an acronym adopted by the US Navy for the Gulf of Oman Naval Zone of Operations) was USS *Constellation* (CV-64), with CVW-9 (and VA-165) embarked. The carrier had departed the South China Sea on 2 February 1979 on what was officially described as 'Contingency Operations' to support US citizen evacuation as the country descended into chaos.

Despite the logistical problems associated with manning 'Gonzo Station', the US Navy started an almost continuous presence in the 'IO' with battle groups centred on the aircraft carrier. For ships' crew the change meant a lot more time underway and a lot fewer liberty ports to visit. In the 'IO' the US Navy turned the small archipelago at Diego Garcia into a supply hub to support the fleet's presence on 'the far side of the world'. Single carriers continued to operate in the Gulf of Oman or off Yemen through to 4 November 1979, when 'students' took over the US embassy in Tehran, capturing 53 American diplomats and military personnel in the effort.

One immediate response from the US government was to order the deployment of a second carrier to the area, with USS *Kitty Hawk* (CV-63) (CVW-15/VA-52) joining *Midway* (CVW-5/VA-115) on 21 November. While the Carter administration publically insisted that diplomacy would be used to free the American prisoners, the presence of two carrier battle groups seemed to imply that there were other, more violent, options that were not out of the question.

By the spring of 1980, the US Navy's two carriers on station were *Coral Sea* (CVW-14/VA-196) and *Nimitz* (CVW-8/VA-35), the latter being the first Atlantic Fleet 'flattop' to sail in the Arabian Sea. Both were now waiting for the National Command Authority to authorise an audacious raid to attempt the rescue of the captured Americans. Unbeknownst to practically anyone outside those on 'Gonzo Station', the US Navy had sent a squadron of RH-53D Sea Stallion helicopters into the region, the machines, belonging to anti-mine squadron HM-14, having been secretly flown aboard *Kitty Hawk* from Diego Garcia. Eventually transferred to *Nimitz*, the US Navy helicopters would perform a critical role in the upcoming event.

On the night of 24 April 1980, the RH-53Ds departed *Nimitz* with US Marine Corps flight crews at the controls, thus signalling the start of the US Navy's contribution to Operation *Eagle Claw* – a complex event that would require detailed timing and involve men from every service. On board the two carriers, aircrew prepared for strikes well into Iran, up to and including Tehran. Their purpose would be to support the egress of the transports that were going to be used to bring the hostages and a US Army rescue team out of country. Contrary to what President Jimmy Carter told the country, US Navy and US Marine Corps flyers (*Coral Sea* having F-4N-equipped VMFA-323 and VMFA-531 embarked) knew that the prospect of civilian casualties was actually high.

Both air wings had painted 'invasion stripes' on their aircraft in order to ensure visual identification against a potential enemy that also flew F-4s and F-14s. The word to prepare for launch came and crews were ready to fly wherever needed to help support what they now knew was an attempt to rescue the hostages in Tehran by force. And then they had to stand by as the entire affair was aborted due to the calamity in the desert at a location now known as 'Desert One', where attempts to refuel the rescue helicopters from USAF EC-130s went badly wrong resulting in the loss of eight servicemen. In the end neither carrier nor air wing would launch a single strike into Iran. And the hostages would have to wait until January 1981 to be released.

JOHN LEHMAN AND INTRUDER GROWTH

In 1981 newly inaugurated President Ronald Reagan named John Lehman the 65th SECNAV. Lehman, a remarkably self-assured, Ivy League-trained man who was also an officer in the Naval Reserve, qualified as an NFO and A-6 B/N. He quickly became the lead proponent for a '600-ship Navy', with its centrepiece being a force of 14 nuclear-powered aircraft carriers. Within

John Lehman, a Naval Reservist and qualified A-6 B/N, became Secretary of the Navy in 1981 and immediately made an impact on the vision and direction of the service. He continued to fly as time allowed, and is shown here on the flightdeck of *Nimitz* after trapping in a VA-42 aircraft in July 1981 (*US Navy*) this strategy was an increase in the number of Intruders assigned to the air wings, with a goal of having two Medium Attack squadrons on each ship.

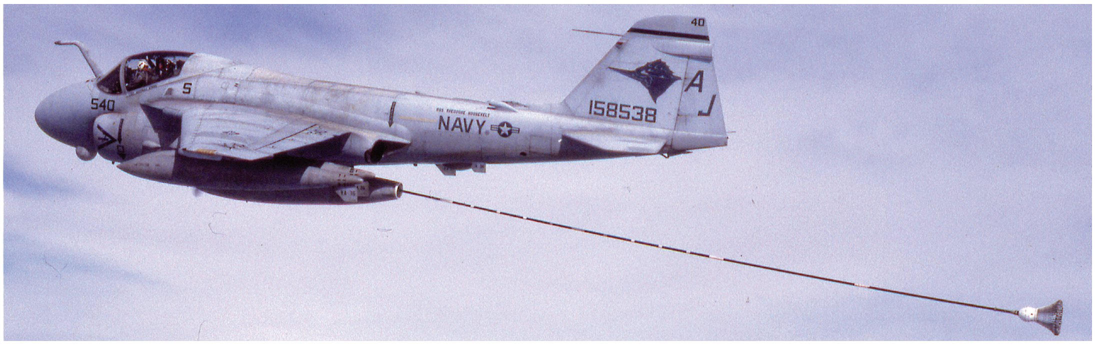
The new requirement was for an additional 12 squadrons, with air wings taking one of three forms, depending on the ship they were assigned to;

1. ***Coral Sea* air wing** – Intended for the two remaining *Midway*-class ships, with two eight-aircraft VA(M) units and three 12-aircraft VFA squadrons flying F/A-18A Hornets. Both *Midway* (with CVW-5) and *Coral Sea* (CVW-13) would deploy with this arrangement.
2. **'All-Grumman' air wing** – Also called the '*Kennedy* air wing', described as an 'experimental' structure with two large VA(M) units and no light attack or strike-fighter assets. The term 'All-Grumman' was commonly used as only 24 F-14 and 24 to 28 A-6 aircraft were assigned, as well as EA-6Bs and E-2s, while ignoring the ten S-3s also onboard. Within the US Navy there was some belief that this plan had a secondary goal to show McDonnell Douglas that it might not need 'short-ranged' F/A-18s to have a powerful CVW. *John F Kennedy* (CVW-3) and *Ranger* (CVW-2) would be the only two carriers to deploy with this arrangement.
3. **Notional air wing –** In what was said, for a short period, to be the ultimate air wing, the 'Notional' CVW featured two squadrons of ten to twelve aircraft each of VF, VA(M) and VFA, along with the 'cat and dog' units (VAQ, VAW, VS and HS) for 86 aircraft in total. While at one time the US Navy officially planned to make this the standard for the entire fleet, the cost and size of the effort led to only one CVW ever being formed under its blueprint, with CVW-8 and USS *Theodore Roosevelt* (CVN-71) making only two deployments as such, before reverting to the older standard, with only one A-6 unit onboard.

Lehman's ambitious plan was to have, by 1992, 28 VA(M) squadrons flying Intruders with one *Midway*, 11 Notional and two *Kennedy* wings assigned to 14 aircraft carriers. On 7 October 1983 VA-55 was established at Oceana as the first of the new squadrons. It adopted the nickname and insignia of the previous VA-55, which had been disestablished as an A-4F-equipped unit in 1975. The 'War Horses' joined the equally new CVW-13, bound for *Coral Sea*, which was slated to end its years in the Atlantic Fleet. While intended as part of a two Intruder squadron air wing, VA-55's first deployment would be with four F/A-18A squadrons.

The 'Lehman Plan' continued in 1986-87 as three more Intruder squadrons were quickly established, being led off by VA-185 at Whidbey on 1 December 1986. The 'Night Hawks' carried a new designation with no historical predecessor. While originally planned for new (and short-lived) CVW-10, it soon moved to Japan to join VA-115 in CVW-5. Three months later, on 6 March 1987, VA-36 broke its flag out at Oceana. The 'Roadrunners' bore the title of another past A-4 unit, which had been disestablished in 1969. The squadron was assigned to CVW-8 as part of the first (and only, as it turned out) 'Notional air wing', joining the 'Black Panthers' of VA-35.

On 1 September 1987 the second new Whidbey unit was formed as the 'Silver Foxes' of VA-155 were established, returning a designation last used by a Lemoore-based A-7 squadron. Initially assigned to CVW-10, it



VA-36 was newly formed during the 1980s, adopting the name and traditions of an A-4 unit disestablished in 1969. Assigned to CVW-8, the squadron would make all four of its cruises on board *Theodore Roosevelt*. VA-36 never deployed with KA-6Ds, instead equipping a number of its A-6E TRAMs with buddy stores as and when required. Here, AJ 540 BuNo 158538 trails a hose out of its buddy store in November 1990. The jet is carrying four additional external fuel tanks in what was referred to as 'maxi-tanker' configuration. If it had only a single tank under each wing the A-6 was set up in 'mini-tanker' configuration (*Author*)

became the only unit in that wing to survive its June 1988 closure. The 'Foxes' then joined CVW-17 for a short trip around the Horn in USS *Independence* (CV-62), before moving to CVW-2 to replace US Marine Corps Intruder unit VMA(AW)-121 in that 'All-Grumman' air wing.

By late 1987 reality set in as it was obvious that the US Navy did not have enough money or people to continue building 'Notional air wings' and had to eventually go back to a standard five-squadron two VF, two VFA/VA(L) and one VA(M) configuration for its air wing core. Not only did four CVWs eventually disestablish (CVW-13, CVW-6, CVW-15 and CVW-10, the last of which had never fully formed), but the Lehman goal of 24 Intruder squadrons evaporated as well. When the decision was made, Oceana was preparing to establish the 'Ubangis' of VA-12 as a new Intruder unit and Whidbey had plans to form VA-164 as its next Medium Attack squadron. Official correspondence inside the Whidbey wing indicated that the next four would have been VA-212, -215, -56 and -93, all former light attack designations. In the end it was not to be, the result being that the regular US Navy's Medium Attack community reached its apogee at 16 squadrons in 1987.

As of March 1988 there were 410 Intruders in the inventory – 342 A-6Es and 68s KA-6D. The production line remained open, with 12 to 24 new aircraft ordered annually for at least four more years. However, John Lehman's April 1987 resignation and the end of the Reagan-era defence budgets forced the US Navy to completely re-think its acquisition and growth strategy during the late 1980s. Despite the reduction in funding, the legacy of Lehman's efforts would soon be seen in action in the deserts of the Middle East as, notably, the final three of the 'dual A-6' air wings would fight in Operation *Desert Storm* as part of the same Task Force.

URGENT FURY

Independence departed Norfolk on 18 October 1983, with the ship and CVW-6 expecting to proceed to the Med to relieve *Eisenhower*. Instead air wing personnel soon realised that they were heading south, not east. Their new destination, which had been a closely kept secret, was the small Caribbean island of Grenada, located about 80 miles north of Venezuela. The Reagan administration had determined that the 'New Jewel Movement' government of Grenada had moved too far towards the communist sphere and become too cosy with Cuba in particular. There was

A dramatic shot of VA-95 A-6E NH 502 BuNo 161090 flying a low-level route in eastern Washington in August 1985, this photograph being taken out of his wingman's B/N's window. The aircraft appears to be at least 500 ft above the ground – in a tactical situation Intruders flew as low as feasible, with many crews being comfortable down at 200 ft, or less, even at night (*Bruce Trombecky*)

also the concern that expansion at the island's primary airport would allow use by Soviet long-range bombers. Therefore, the regime had to be overthrown.

'Indy' and its battle group arrived off the island to begin operations on 25 October in support of what was now called Operation *Urgent Fury*. US forces, including Marines (from the 22nd Marine Amphibious Unit, centred on the amphibious assault ship USS *Guam* (LPH-9)), US Army troops and special forces came ashore by helicopter and parachute to take control of the island and rescue a group of American students at a medical school.

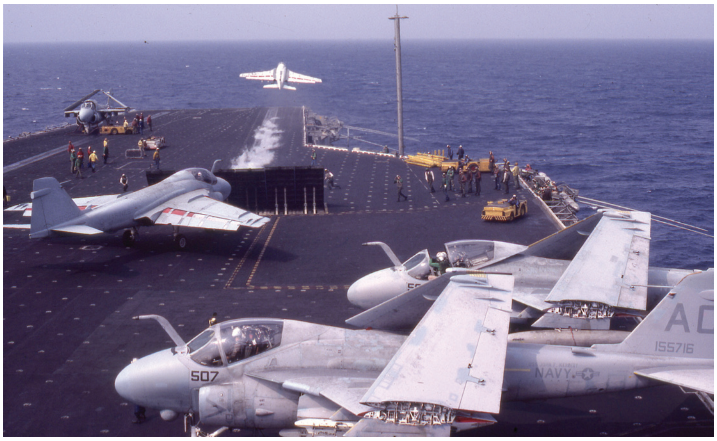
Embarked as CVW-6's Intruder unit was Cdr Mike Currie's VA-176, which provided CAS for US forces while also carrying out tanking and sea control functions. The air wing's two A-7E squadrons (VA-15 and -87) were even more heavily involved. The fight for Grenada was short, with the situation being declared over by 2 November. While CVW-6 had taken no losses, the operation had still cost the lives of 18 American troops and resulted in the destruction of two US Marine Corps helicopters.

DEBACLE IN LEBANON

With Grenada wrapped up, the 'Indy' pressed on to the Mediterranean, where it finally relieved *Eisenhower* (CVW-7/VA-65), which headed for home. These were still the days of Sixth Fleet having two carriers assigned, and CV-62 joined *John F Kennedy*, which had CVW-3 – the first 'dual A-6' air wing – embarked. The senior officer on board CV-67 was the legendary Vice Adm Jerry O Tuttle, a short, fiery Naval Aviator with a light attack pedigree who was double-hatted as Commander, Carrier Group Two as well as Commander, Battle Fleet Sixth Fleet.

Foremost on the international stage at this point was the disintegration of Lebanon, as what had once been called 'the Paris of the Middle East' degenerated into violence and chaos involving multiple groups using assorted religious justification. The US government, fearing a much bigger war involving Syria and Israel, put Marines ashore in Beirut in order to help stabilise a situation that was rapidly headed south. It also placed two carriers off the beach to show national resolve.

According to one of Tuttle's staff officers, Lt Cdr Joe Hulsey, 'we had been on constant alert for weeks, with one carrier being in "alert 30" with aircraft fully loaded and crews briefed, while the other flightdeck conducted normal flight ops. This changed every 24 hours in order to share the load. The force was ready, having prepared more than 300 potential targets in the region. We had timing and weapons loads planned for all of them, and all of this information was sent up the chain to Sixth Fleet and CINCEUR [Commander in Chief, US Forces Europe] so that they'd know what we were prepared to do. On top of that, we had Jerry Tuttle in charge. He was exactly who you'd want in that position if you were going over the beach.'



The first deployment of a 'dual A-6' air wing occurred in 1983 when VA-75 and -85 embarked in *Kennedy* with CVW-3. The US Marine Corps took the 'Black Falcons'' spot for the following two Mediterranean cruises, with the 'Nighthawks' of VMA(AW)-533 doing the honours. In this action photograph, a launch is in progress off 'Big John's' catapult one, with nothing but Intruders in sight. A KA-6D from VA-75 (it was the only Intruder unit in CVW-3 equipped with the KA-6 at that time) is clearing the bow while Marine aircraft AC 550 BuNo 158529 waits its turn behind the jet blast deflector. Note how the markings on this aircraft are barely legible from this angle due to the heavily weathered TPS. AC 507 BuNo 155716 is a VA-75 A-6E TRAM with a MER-full of Mk 76 practice bombs (*Rick Burgess*)

The hair-trigger condition continued until about 1 December, when the carriers received direction to stand down from constant alert. Then, at about 0300 hrs on the morning of the 3rd, a Flash order arrived from Sixth Fleet to execute strikes against six specific targets in Lebanon, with a time on target (ToT) of only four hours later. The order was initially believed by the staff to have been sent in error, but as messages and voice traffic flashed between the ships and Sixth Fleet it became obvious that 'somebody' much higher had decided on military action with absolutely no regard for what it took for the operational forces to actually execute it.

Aircraft were not ready or correctly spotted on the flightdeck, proper ordnance was not loaded and crews were not briefed. On top of that, only one of the six specified targets had actually been prepared by the ships, and the other five, considered militarily irrelevant, were all new. While the ships rapidly woke up, it was confirmed that the ToT was an absolute that had to be met, which led to an all-hands effort to carry out their orders.

What followed was a disaster.

Kennedy launched 12 Intruders (seven from VA-85 and five from VA-75) and *Independence* sent five aloft, along with several KA-6Ds. A-7Es from 'Indy' went as well, as did Tomcats and Prowlers from both carriers. Ordnance loads were limited by time available and, in most cases, were not optimum for their targets – Syrian tanks and AAA sites in Lebanon's Bekaa Valley, close to the Syrian border. Only one Intruder from *Kennedy* got off with a full bomb load. Aircraft went feet dry at medium altitude at dawn, and almost immediately were engulfed by AAA and missiles. While EA-6Bs appeared to render any radar-guided SAMs ineffective, the sky was full of infrared-guided weapons blind to the Prowlers' magic.

The one fully loaded Intruder, 'Buckeye 556' (BuNo 152915), found itself working hard to keep up with the rest of its formation. On board were pilot Lt Mike Lange and B/N Lt Bobby Goodman. Infrared decoys and flares filled the sky as aircraft tried to avoid the SAMs coming up from the ground. 'Buckeye 556' was soon hit, probably by a Syrian 9K31 Strela-1 or Strela-2 infrared-guided SAM. The crew ejected, and Lange soon succumbed to injuries suffered in the process of leaving the aircraft. Goodman was turned over to Syrian troops and duly spent several weeks in a jail near Damascus. He would be released after a flurry of diplomatic work that included the appearance of The Reverend Jesse Jackson.

Through the hail of fire, the Intruders and Corsair IIs delivered ordnance on their assigned targets, the 'Thunderbolts' specifically dropping 25 Mk 82s, 23 Mk 83s and 30 Rockeyes.

CAG-6, Cdr Ed Andrews, was flying VA-15 A-7E 'Active Boy 305' (BuNo 157468) and he took over as on-scene search and rescue commander for the downed Intruder. He was soon hit by an infrared-guided SAM himself and had to eject off the coast, where he was picked up by friendly fishermen and eventually returned to the US Navy. VA-15 Corsair II 'Active Boy 314' (BuNo 157458) was also hit, but its pilot was able to recover aboard *Independence*.

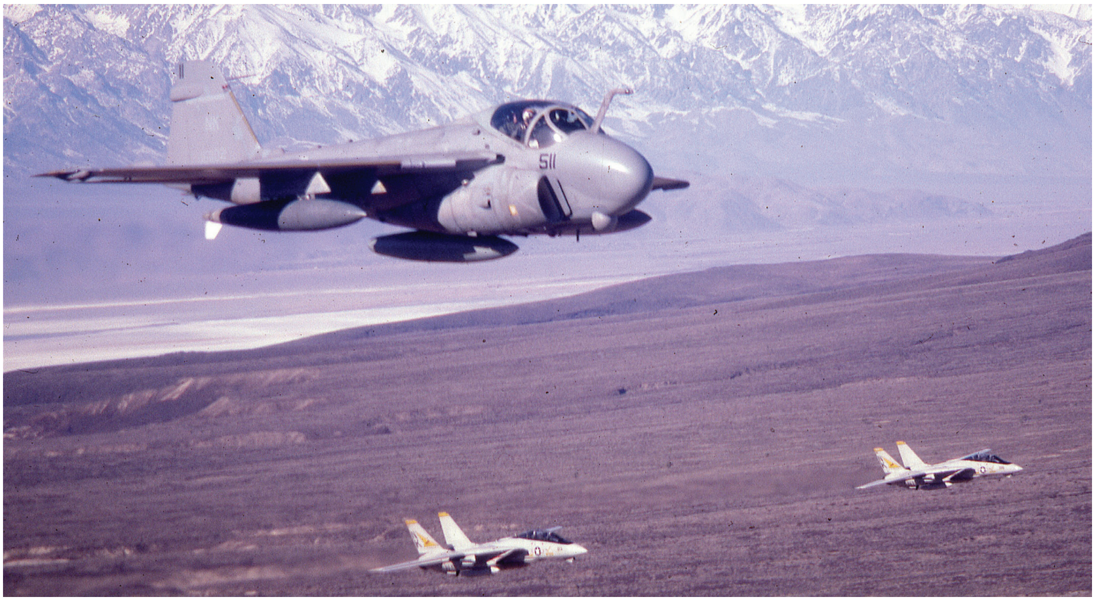
As stated by Lt Cdr Hulsey, 'even six more hours would've made all the difference in the world, but they wouldn't give it to us. We found out later that the source (presumably out of Washington, D.C.) didn't even get the time zone conversion right in the message, which cost us at least two more hours to prepare.' As the saying goes, 'Success has a thousand fathers while failure dies an orphan.' In this case, who actually picked the targets and ToT is still unknown. While bombing results were officially described as 'effective', on board both ships, and throughout carrier aviation, there grew a rapid and long-lasting bitter taste over the strike. Professionally, the event was viewed as nothing short of a failure that would eventually lead to a number of changes, including the formation of 'Strike U' at Fallon to develop and teach more effective air wing tactics.

ENTER THE 'BUG'

In 1983 the McDonnell Douglas F/A-18A Hornet joined the fleet to much fanfare. The new 'Strike Fighter' would soon replace the last F-4 Phantom IIs in the US Navy, as well as beginning an eight-year march that eventually killed the dedicated Light Attack (A-7) community.

What the Hornet had was 'flash'. It was new, sexy and featured a good mix of air-to-air and air-to-ground capability. What it did not have was range, quickly proving no longer-legged than the Phantom IIs it replaced and having nowhere near the combat radius of the A-7, let alone the A-6. It also did not have, at least initially, the same sensor and 'all-weather' capability of the Intruder – but then it was not supposed to have this ability either. What it did have was a decent radar and much better self-defence capability, while also being considerably cheaper to operate than the A-6.

Another Intruder down low, in this case VA-196 A-6E TRAM NK 511 BuNo 152610 on a CVW-14 'raid' on China Lake, California, in January 1985, with the Sierra Nevadas as a backdrop. The Intruder was carrying a MER with six Mk 76 practice bombs underneath its port wing. The escort F-14As from VF-21 were actually lower than the A-6 on this occasion, the fighters tangling with adversaries from VF-126 as the strike package neared the target (*Author*)



CVW-14 would be the first US Navy air wing to get the Hornet when it welcomed Strike Fighter Squadrons (VFA) -25 and -113 aboard in 1983. The air wing's VA(M) role was covered by the 'Main Battery' of VA-196, Cdr Bud Jupin's unit taking nine A-6E TRAMs and a quartet of KA-6Ds to WestPac in *Constellation* from 21 February 1985. VA-196 worked hard on a cruise that went into the 'IO', being determined to show that Medium Attack still had a critical role to perform on the carrier. With both Tomcats and Hornets now routinely requiring refuelling (and no A-7s to help carry the load nor S-3s qualified at that point), the 'Milestones' found themselves covering 100 per cent of the air wing's aerial refuelling needs, so therefore practically every Intruder that launched carried a buddy store for tanking. The reality of the arrangement was demonstrated by an incident while heading west across the Pacific, as a B/N from VA-196 explained;

'Early in cruise we were in the "Bear Box" off Guam, this being the area in the mid-Pacific where you usually encountered Soviet Tu-95 "Bears" coming out of Siberia to find the carrier. The Russians had sent a pair of them out to look for us and we'd spent the entire day tanking Tomcats and Hornets, which were escorting them while in the area. Then the sun set and VA-196 was scheduled to fly several events to drop Mk 76 practice bombs at night on targets in the Marianas. We launched several aircraft and then, without warning, were ordered to return to the carrier as tankers because the word had gone out that the Russians were back in the area.

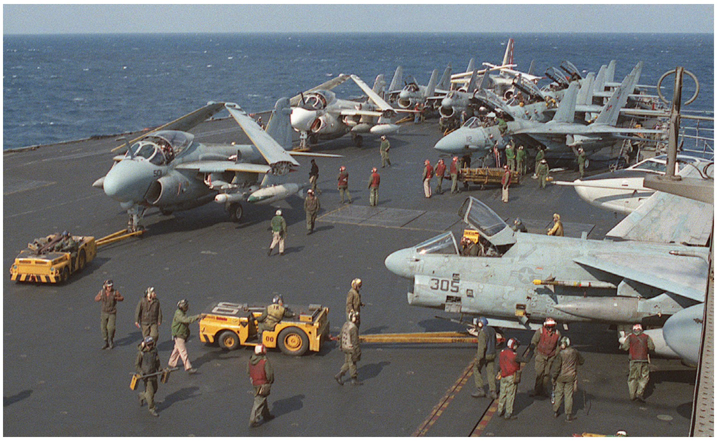
'The ship launched CAP and we re-set the fighter grid as they sorted things out. NOBODY had ever heard of the Soviets having recon in this part of the ocean after dark – their goal was, after all, to observe and shoot photos of the carriers. We did as we were told, passed gas and stooged around in the dark for a while, before being told to come home with no other activity. It turned out some knucklehead in the VAQ squadron saw what he thought was Tu-22 "Blinder" – an aircraft NEVER seen out this far – radar activity that turned out to actually be a search radar on one of our cruisers. The entire force had practically gone to GQ [General Quarters] over it.'

Nonetheless, the 'Milestones' went on to have an excellent cruise, which ended in August 1985.

The Intruder found its way onto the big screen in two notable motion pictures during its final years in service. In 1979, VA-35 had a bit part in the 1980-release *The Final Countdown* – a science fiction film where *Nimitz* went through a weather anomaly and ended up off Hawaii on 6 December 1941. The 'Black Panther' role was largely kept to tanking VF-84 F-14As. In 1991, *The Flight of the Intruder* debuted, this being the film version of former VA-196 pilot Steven Coonts' novel about Vietnam. For this effort the US Navy used VA-165 aircraft re-marked as 'Milestones', with most of the filming being done on *Independence* and over Hawaii.

LIBYA 1986

If the 1970s had started calmly in the Mediterranean for US forces, this rapidly changed as the decade progressed due to recurring, and escalating, stages of warfare between Israel and its Arab neighbours, as well as the emergence of a number of non-state terrorist groups. In Libya, Col Muammar Gaddafi had seized control via a coup in 1969, and over



The flightdeck of *Saratoga* in February 1986 while conducting FONOPs off the coast of Libya. CVW-17 aircraft include VA-85 Intruders, A-7Es from VA-81 and -83, F-14s from VF-74 and -103 and a single S-3A from VS-30. The nose of a VQ-2 Det EA-3B peeks out from the right. The first Intruder, A-6E AA 501 BuNo 161685, carries a SUCAP load of Rockeyes, while the squadronmate behind it is KA-6D AA 521 BuNo 152611 (*US Navy*)

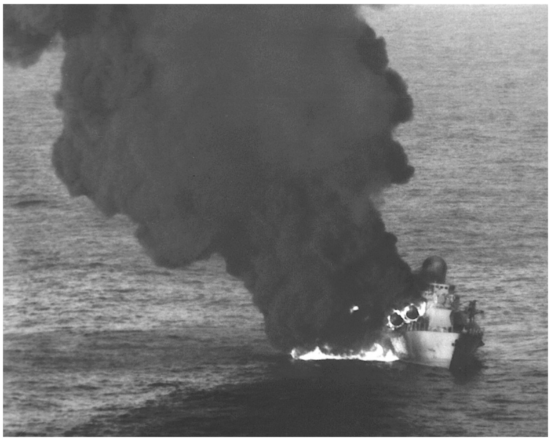
time he established a revolutionary government hostile to the west and the United States in particular. His actions would lead to several years of conflict with neighbours and two significant operations involving A-6s.

In 1974 Gaddafi declared that the Gulf of Sidra, the portion of the Mediterranean south of the 32º 30' North latitude, was sovereign Libyan water and therefore off-limits to all other shipping. The US government refused to accept the claim and the Sixth Fleet became the obvious tool to dispute the issue. The US Navy responded by what was described as 'Freedom of Navigation Operations', or FONOPs, where ships and aircraft would routinely operate in the disputed waters. Libya's answer was initially muted, and it would take seven years before things really heated up.

In August 1981 F-14As flying from *Nimitz* downed two Libyan Su-22 'Fitters' that had attempted to engage them over the Gulf of Sidra. Libya's apparent response to what it viewed as US aggression was to support a series of terrorist attacks in Lebanon and Europe by surrogate groups. By January 1986 President Reagan had declared Libya to be an 'unusual and extraordinary' threat to the United States that had to be dealt with. Sixth Fleet now consisted of two carrier battle groups, USS *Saratoga* (CV-60) (CVW-17/VA-85) having just returned from the 'IO', and *Coral Sea* (CVW-13/VA-55), which had been on station for several weeks. Back in Norfolk, *America* (CVW-1/VA-34) was preparing for a March departure to join them.

Operation *Attain Document*, a large FONOP, began on 15 January. Libya placed its forces on 'full alert' and declared that America was 'practising state terrorism against a small, peaceful country'. Fighter aircraft from both sides jousted over the Gulf of Sidra but there were no shots exchanged this time. A month later, on 12 February, Sixth Fleet returned for *Attain Document II*, its vessels sailing across what was now being referred to as 'The Line of Death' due to Gaddafi's frequently dire statements. Through it all the two Intruder squadrons present conducted surface search and tanker support for both air wings. *Attain Document III*, which began on 24 March, now included the recently arrived *America*, increasing Sixth Fleet's strength to 26 warships and 250 aircraft, many of which were now operating well into the Gulf of Sidra in what was clearly viewed as a provocative act by Libya.

Shooting started at 1452 hrs on the 24th when Libyan SA-5 missile batteries at Sirte launched SAMs at orbiting Tomcats. The US Navy responded with radar jamming and HARM shots. This pre-planned action, now referred to as Operation *Prairie Fire*, continued until evening when, at 2100 hrs, an E-2C picked up a single Libyan patrol boat headed north towards the three carrier battle groups. The vessel, the 250-ton



This widely distributed picture shows a Libyan *Nanuchka*-class corvette burning furiously after being hit by a Harpoon fired by a VA-85 Intruder during Operation *Prairie Fire*. It would eventually sink (*US Navy*)

French-built *La Combattante II*-class missile craft *Waheed*, was engaged by VA-34 Intruders, which fired Harpoon missiles for the first time in combat. A section of VA-85 aircraft followed up with Mk 20 'Rockeye' cluster bombs, which finished off the vessel.

While the Libyans continued to shoot the odd SAM at US Navy aircraft (none of which connected), at 2335 hrs a 560-ton Libyan *Nanuchka*-class corvette was engaged by Rockeye-dropping 'Black Falcons', which held their Harpoons back due to friendly surface traffic in the area. The heavily damaged warship was able to limp back into port. Finally, on the morning of the 25th, another of the Soviet-built *Nanuchkas* was attacked, this time by VA-55 aircraft off *Coral Sea*. The vessel took a pattern of CBU-59 Anti-Personnel/Anti-Material bombs and then a Harpoon 'chaser' from a VA-85 A-6E. The corvette, burning furiously, eventually sank.

The identities of the two Libyan corvettes have been confused ever since. Official US Navy documentation says the first ship was the *Ain Zaquit* and the second vessel – the one sunk – the *Ain Mara*. The authoritative Jane's Group, however, states that the two names are reversed, and that *Ain Mara* was the first ship attacked and would subsequently travel to the USSR for repairs and eventually return to Libya in 1991 as the *Tariq ibn Ziyad*.

It was at about this point that both sides backed off and separated to catch their breath. *Saratoga* departed for home and the remaining two carriers went back to routine business. The apparent bloody nose his forces had received did not stop Gaddafi's rhetoric, however, and he vowed to (paraphrase) 'continue the struggle until victory'. On 5 April a nightspot in Berlin was bombed, killing two American servicemen. Libya was immediately implicated and the stage was set for the next action.

Ten days later US forces launched coordinated strikes into Libya itself. Referred to as Operation *El Dorado Canyon*, the event would involve Intruders from both remaining carriers and USAF F-111Fs flying out of Lakenheath, in Suffolk (see *Osprey Combat Aircraft 102 – F-111 and EF-111 Units in Combat* for further details). Targets would be in Tripoli and Benghazi. VA-34 would strike the al-Jamahiriya military barracks in downtown Benghazi while the 'War Horses' went after Benina airfield on the outskirts of Tripoli. The USAF's goal was Tripoli airfield and specific political locations in the city itself. Backing up those going over the beach would be a huge array of support aircraft performing defence suppression, MiG CAP, tanking and command and control.

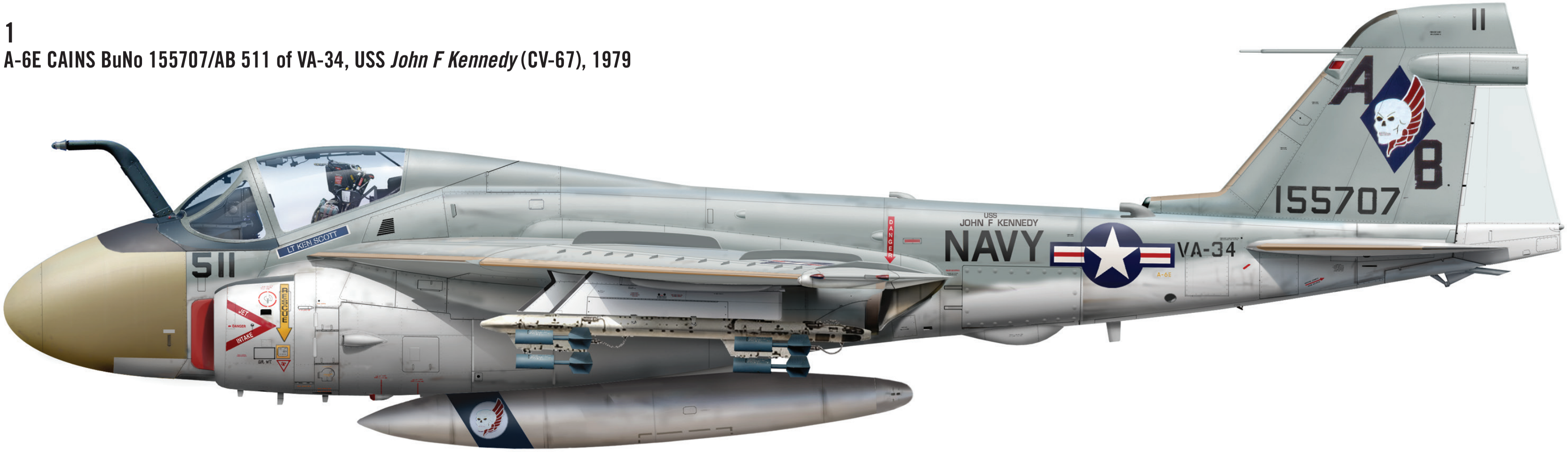
With the UK-based F-111s having already been airborne for several hours, *America* began to launch aircraft at 0045 hrs on 15 April – six 'Blue Blasters' and an equal number of A-7Es (armed with AGM-45 Shrike or AGM-88 HARM) made up the strike group. While the (*text continues on page 48*)

VA-34 'Blue Blasters' figured predominantly in Operation *El Dorado Canyon*, hitting targets in Benghazi, Libya. Here a section of 'Blaster' A-6E TRAMs fly over the Fallon range in May 1987. At this point they were marked for CVW-7 and an upcoming Mediterranean cruise on board *Eisenhower* (*Bob Lawson*)

COLOUR PLATES

1

A-6E CAINS BuNo 155707/AB 511 of VA-34, USS *John F Kennedy* (CV-67), 1979


511
LT KEN SCOTT
RESCUE
JET
DANGER
INTAKE
DANGER
USS
JOHN F KENNEDY
NAVY
VA-34
155707
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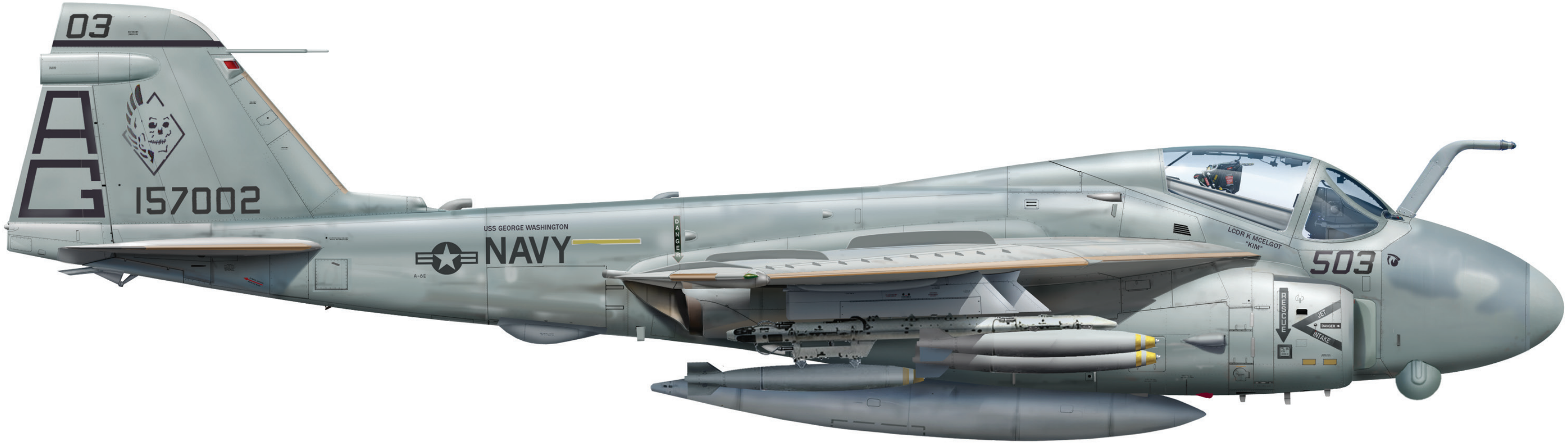
2

A-6E SWIP BuNo 157002/AG 503 of VA-34, USS *George Washington* (CVN-73), 1993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157002
USS GEORGE WASHINGTON
NAVY
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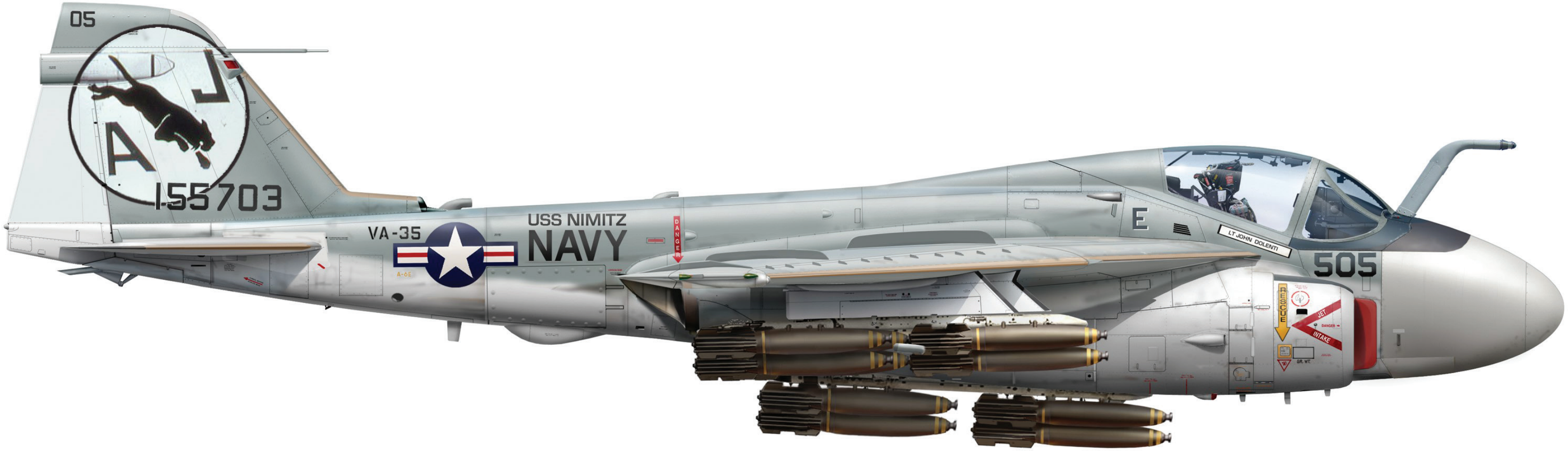
"KIM"
503
RESCUE
JET
DANGER
INTAKE

3

A-6E CAINS BuNo 155703/AJ 505 of VA-35, USS *Nimitz* (CVN-68), 1981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VA-35
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LT JOHN DOLENTI
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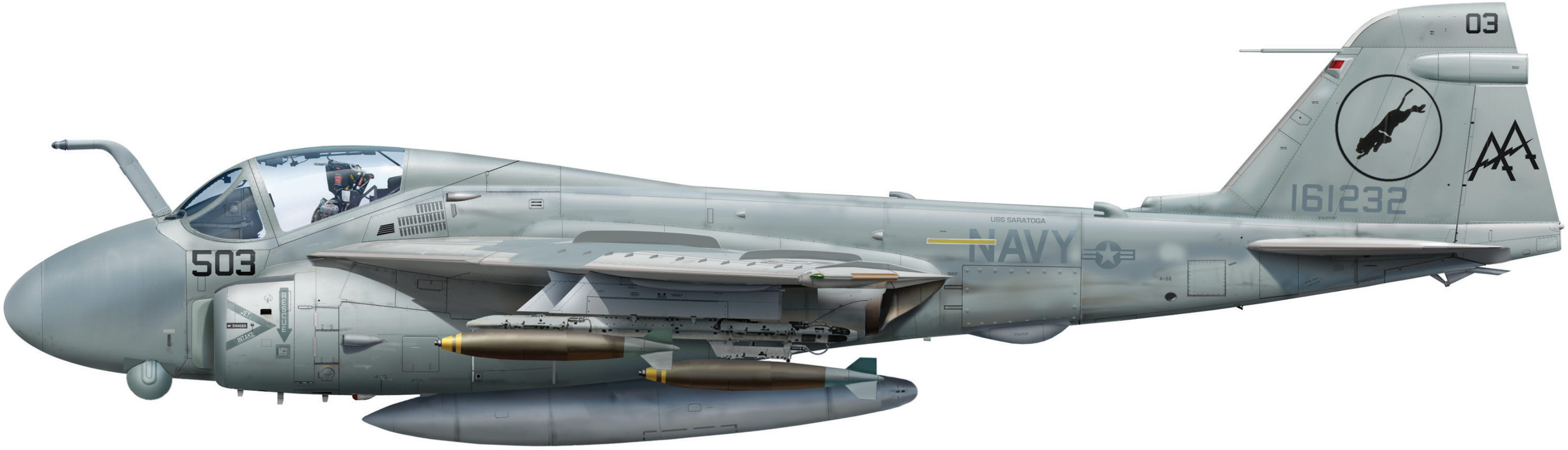
JET
DANGER
INTAKE

4

A-6E TRAM BuNo 161232/AA 503 of VA-35, USS *Saratoga* (CV-60), 1991


503
JET
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RESCUE
USS SARATOGA
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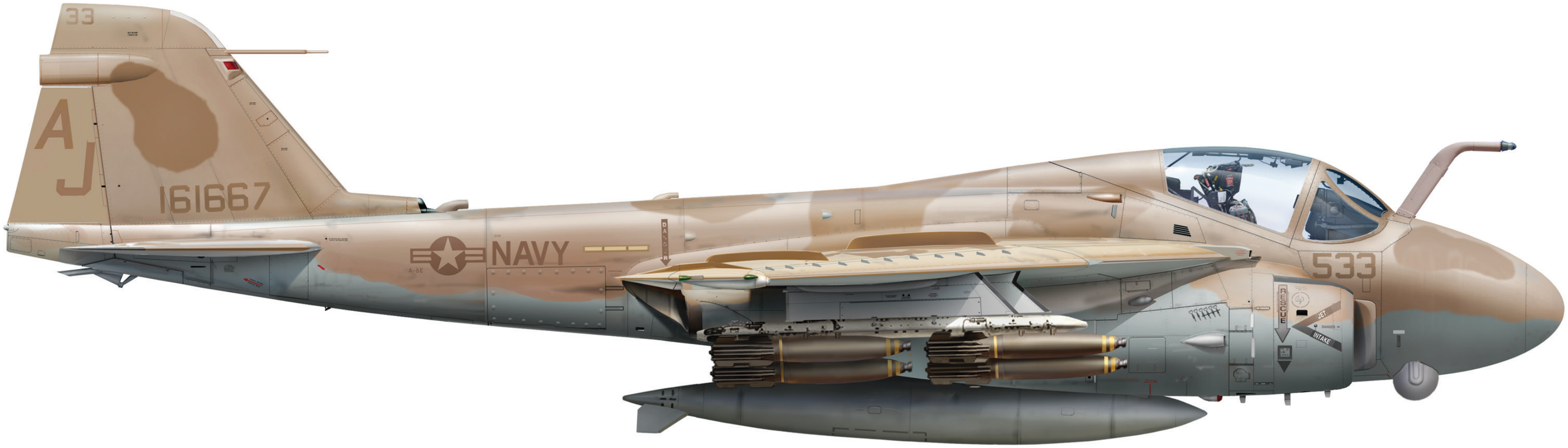
5
A-6E TRAM BuNo 161667/AJ 533 of VA-36, USS *Theodore Roosevelt* (CVN-71), 1991


33
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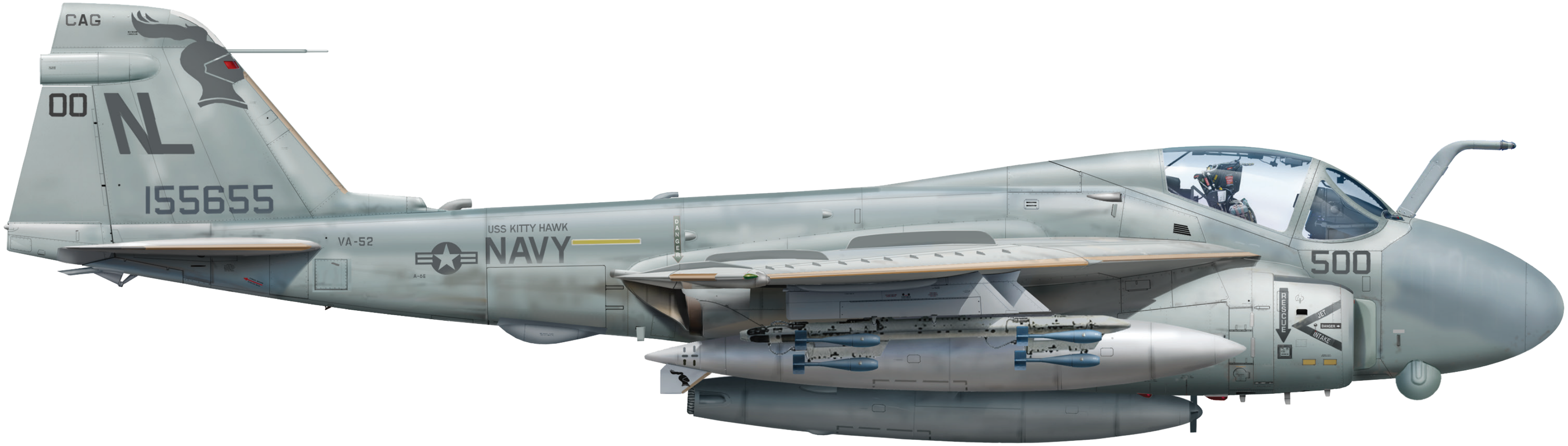
161667
NAVY
DANGER
533
RESCUE
JET
INTAKE

6
A-6E SWIP BuNo 155655/NL 500 of VA-52, USS *Kitty Hawk* (CV-63), 1993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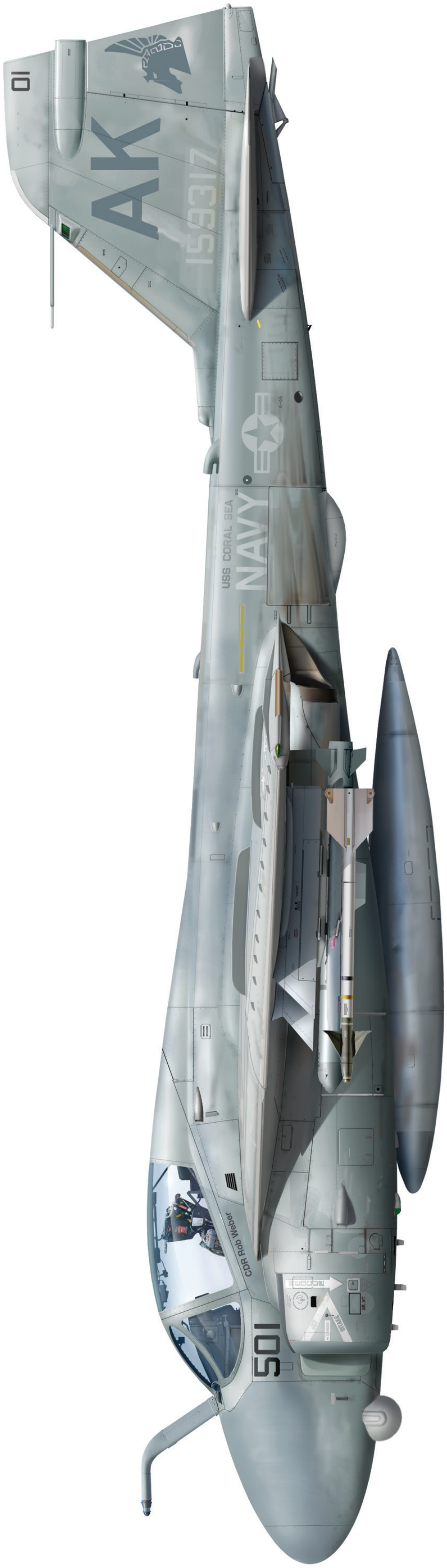
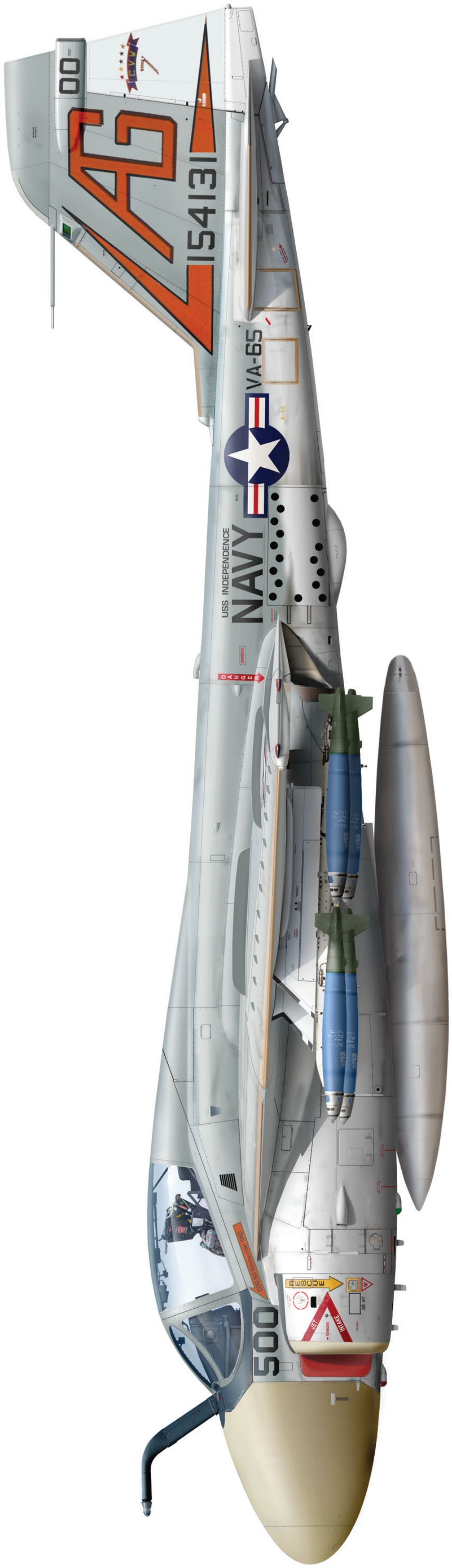
VA-52
USS KITTY HAWK
NAVY
DANGER
500
RESCUE
JET
INTAKE


01
AK
159317
USS CORAL SEA
NAVY
CDR Rob Weber
501

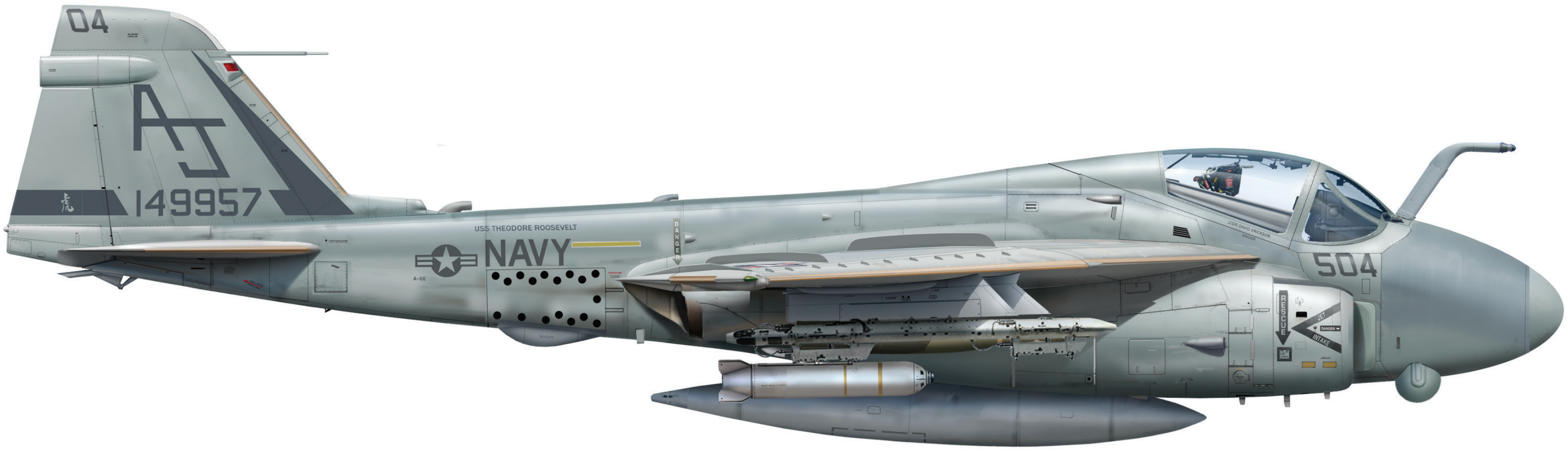
7
A-6E TRAM BuNo 159317/AK 501 of VA-55, USS *Coral Sea* (CV-43), 1986


00
AG
154131
VA-65
USS INDEPENDENCE
NAVY
DANGER
RESCUE
500

8
A-6E BuNo 154131/AG 500 of VA-65, USS *Independence* (CV-61), 1974

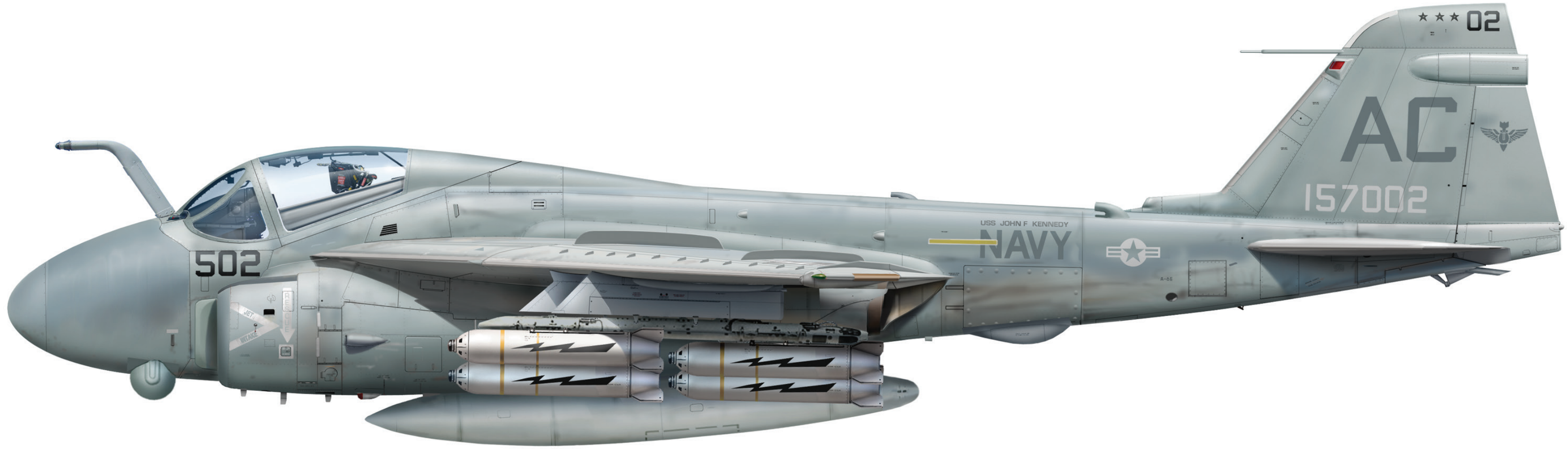
9

A-6E TRAM BuNo 149957/AJ 504 of VA-65, USS *Theodore Roosevelt* (CVN-71), 1991


04
AJ
149957
USS THEODORE ROOSEVELT
NAVY
DANGER
A-6E
504
RESCUE
JET
DANGER
INTAKE

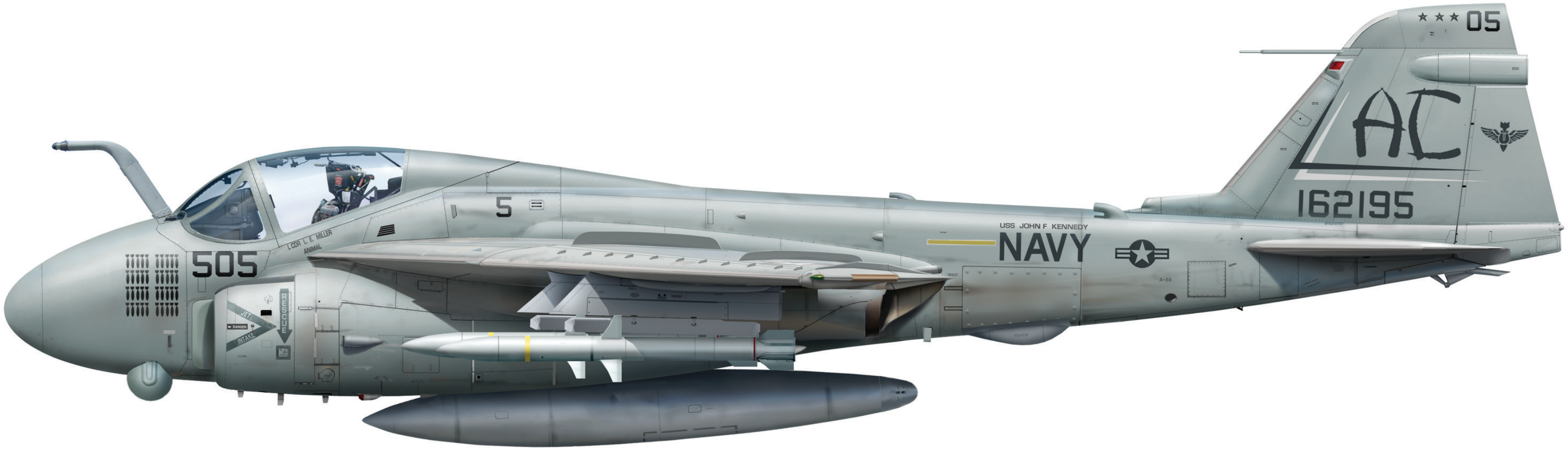
10

A-6E TRAM BuNo 157002/AC 502 of VA-75, USS *John F Kennedy* (CV-67), 1983


02
AC
157002
USS JOHN F KENNEDY
NAVY
A-6E
502

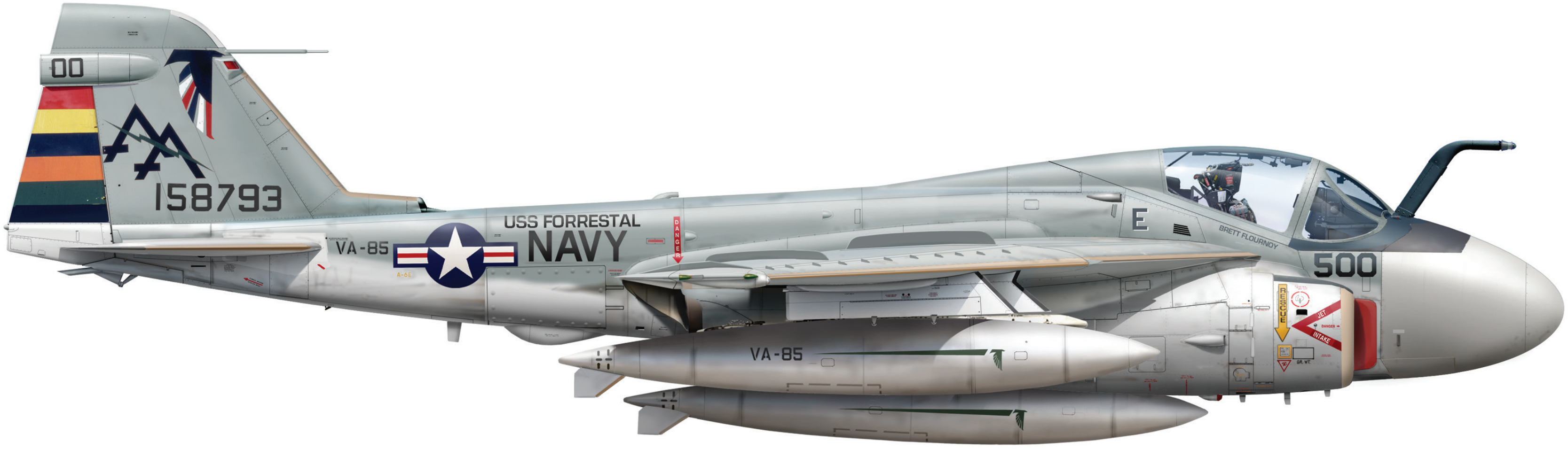
11

A-6E SWIP BuNo 162195/AC 505 of VA-75, USS *John F Kennedy* (CV-67), 1991


★★★ 05
AC
162195
USS JOHN F KENNEDY
NAVY
5
505
LCDR L. E. MILLER
ANIMAL
RESCUE
DANGER
JET INTAKE

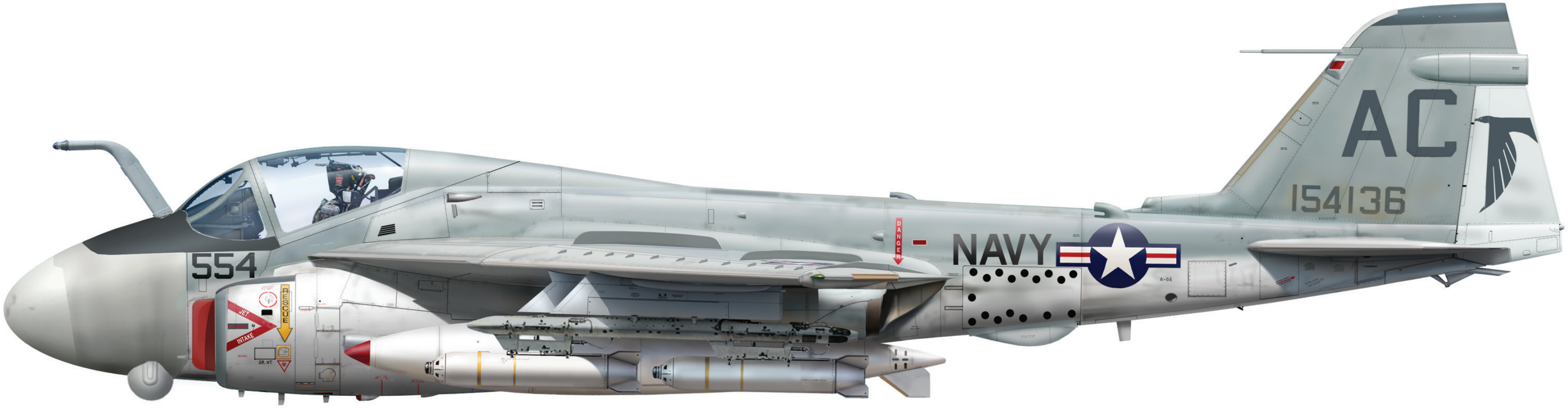
12

A-6E BuNo 158793/AA 500 of VA-85, USS *Forrestal* (CV-59), 1976


00
AA
158793
VA-85
USS FORRESTAL
NAVY
DANGER
E
BRETT FLOURNOY
500
RESCUE
JET INTAKE
VA-85

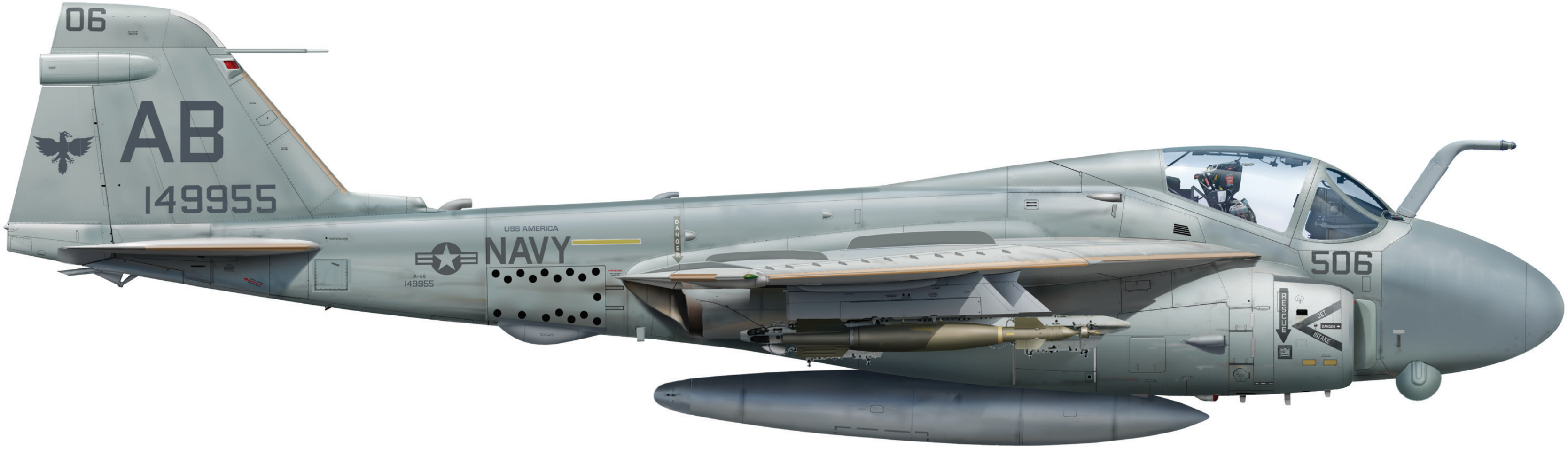
13

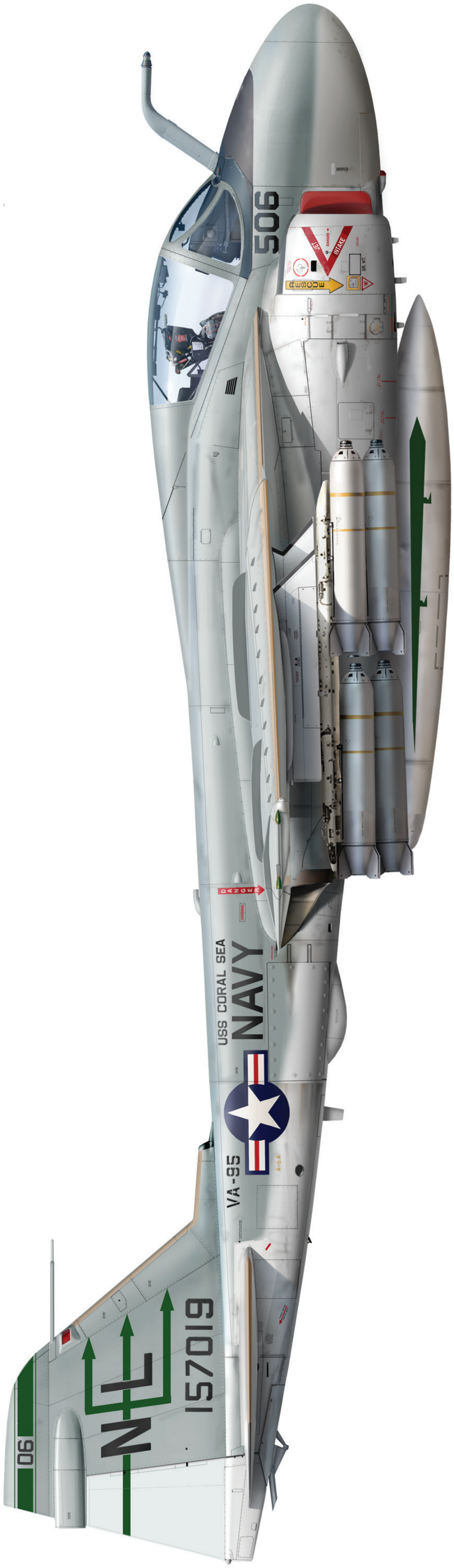
A-6E TRAM BuNo 154136/AC 554 of VA-85, USS *John F Kennedy* (CV-67), 1983


AC
154136
NAVY
554
DANGER
RESCUE
JET
INTAKE
A-6E

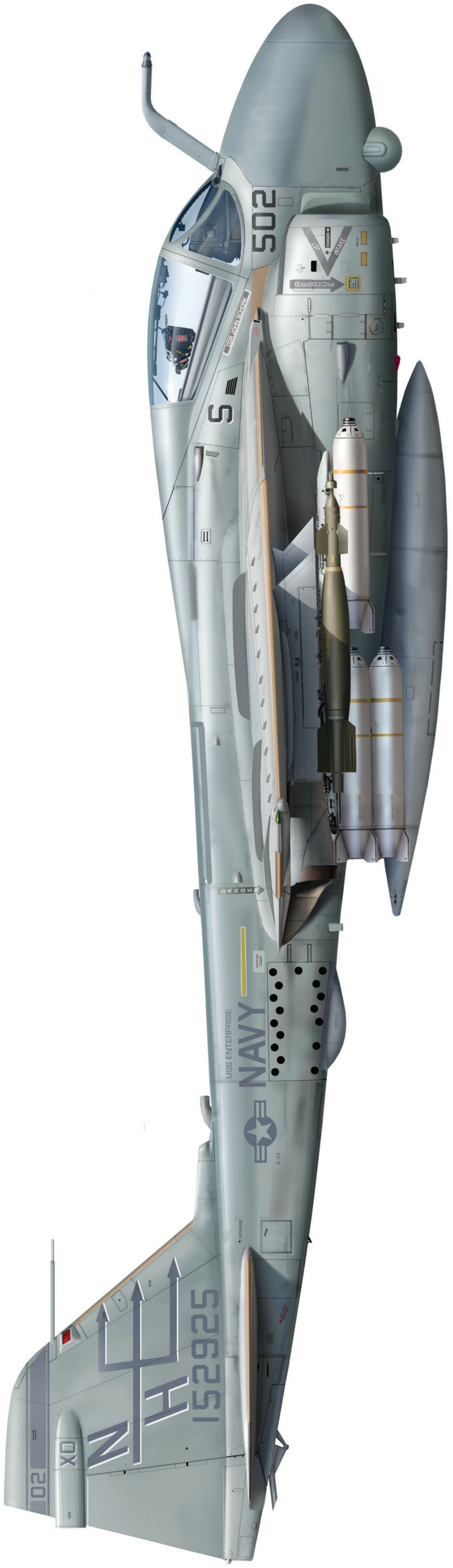
14

A-6E TRAM BuNo 149955/AB 506 of VA-85, USS *America* (CV-66), 1991


06
AB
149955
USS AMERICA
NAVY
A-6E
149955
DANGER
506
RESCUE
JET
INTAKE


506
RESCUE
INTAKE
DANGER
USS CORAL SEA
NAVY
VA-95
157019
NL
06

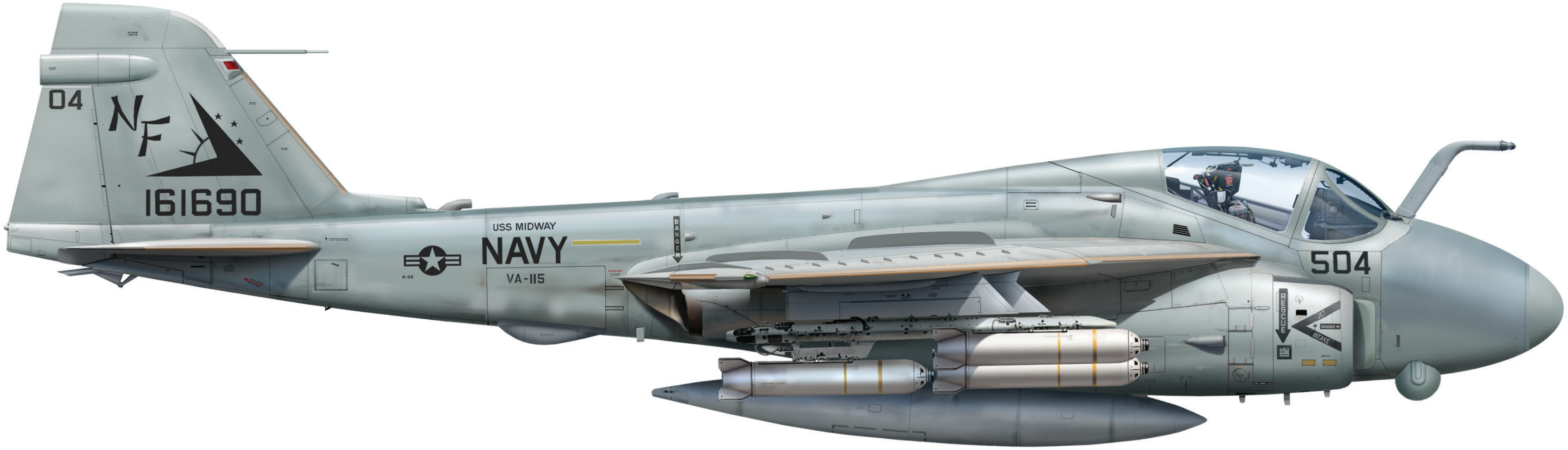
15
A-6A BuNo 157019/NL 506 of VA-95, USS *Coral Sea* (CVA-43), 1975


502
RESCUE
INTAKE
S
DANGER
USS ENTERPRISE
NAVY
152925
NH
XO
02

16
A-6E TRAM BuNo 152925/NH 502 of VA-95, USS *Enterprise* (CVN-65), 1988

17

A-6E TRAM BuNo 161690/NF 504 of VA-115, USS *Midway* (CV-41), 1988


04
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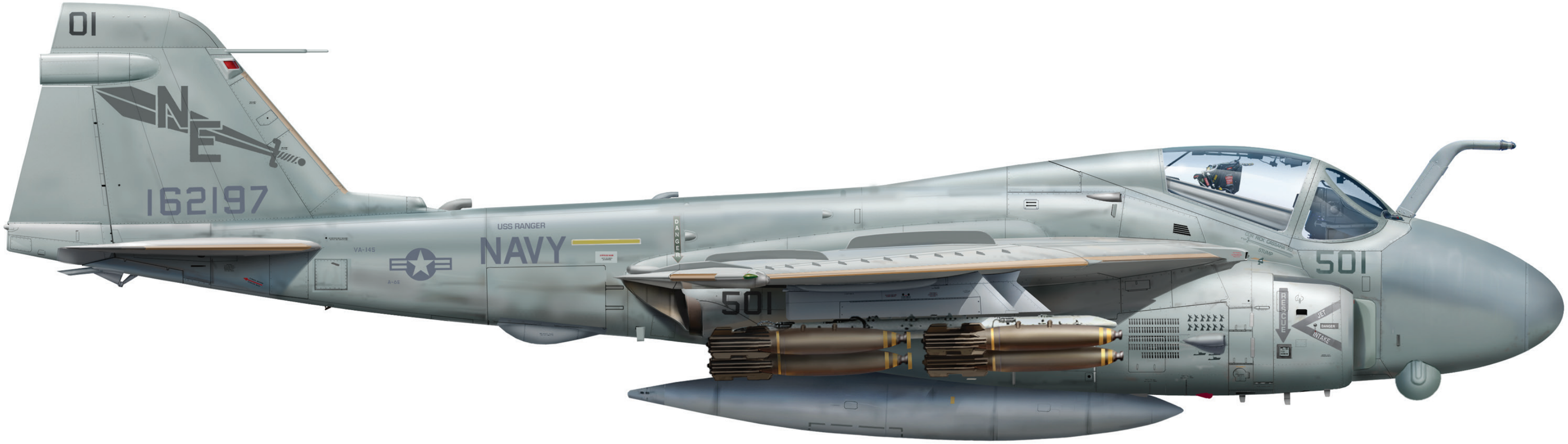
161690
USS MIDWAY
NAVY
VA-115
DANGER
504
RESCUE
JET
DANGER
INTAKE

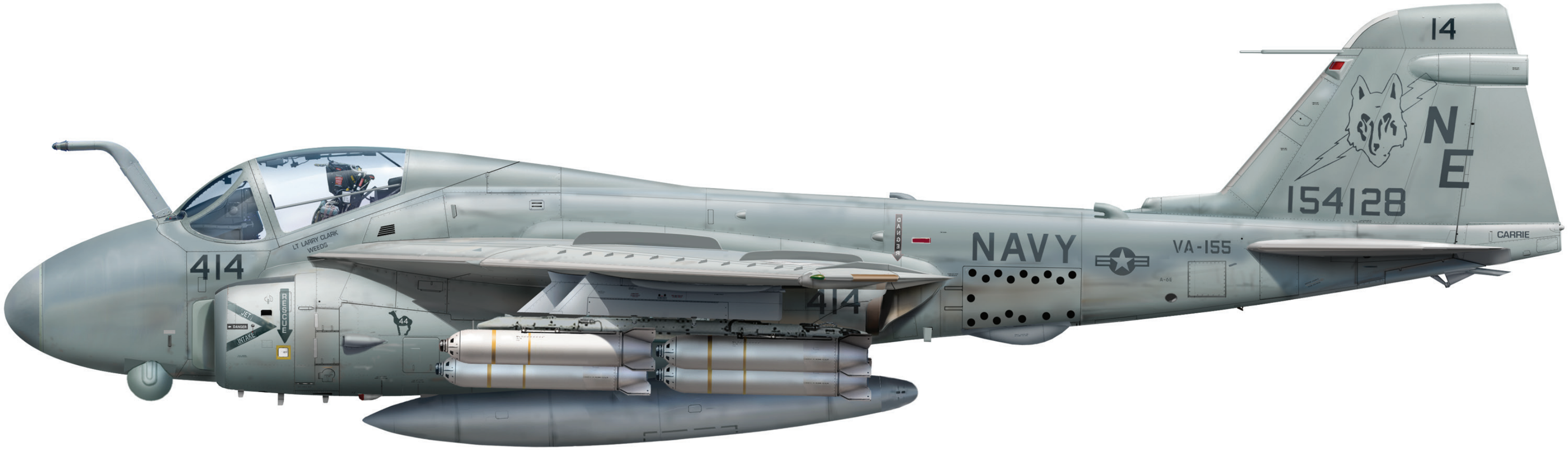
18

A-6E SWIP BuNo 162197/NE 501 of VA-145, USS *Ranger* (CV-61), 1991


01
NE
162197
USS RANGER
VA-145
NAVY
DANGER
501
501
RESCUE
JET
DANGER
INTAKE

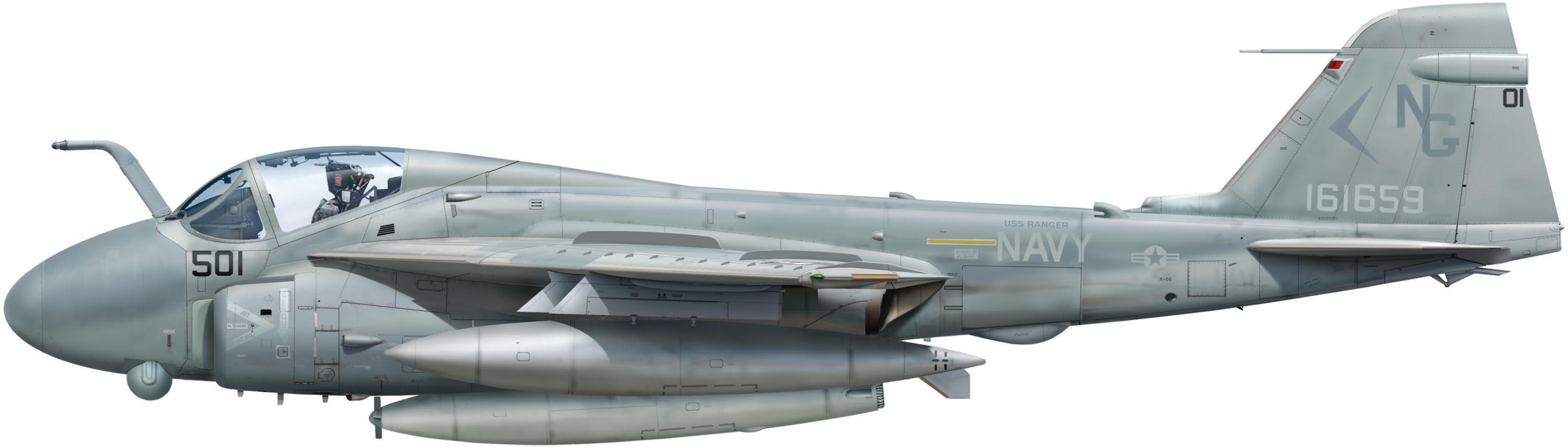
19

A-6E TRAM BuNo 154128/NE 414 of VA-155, USS *Ranger* (CV-61), 1991

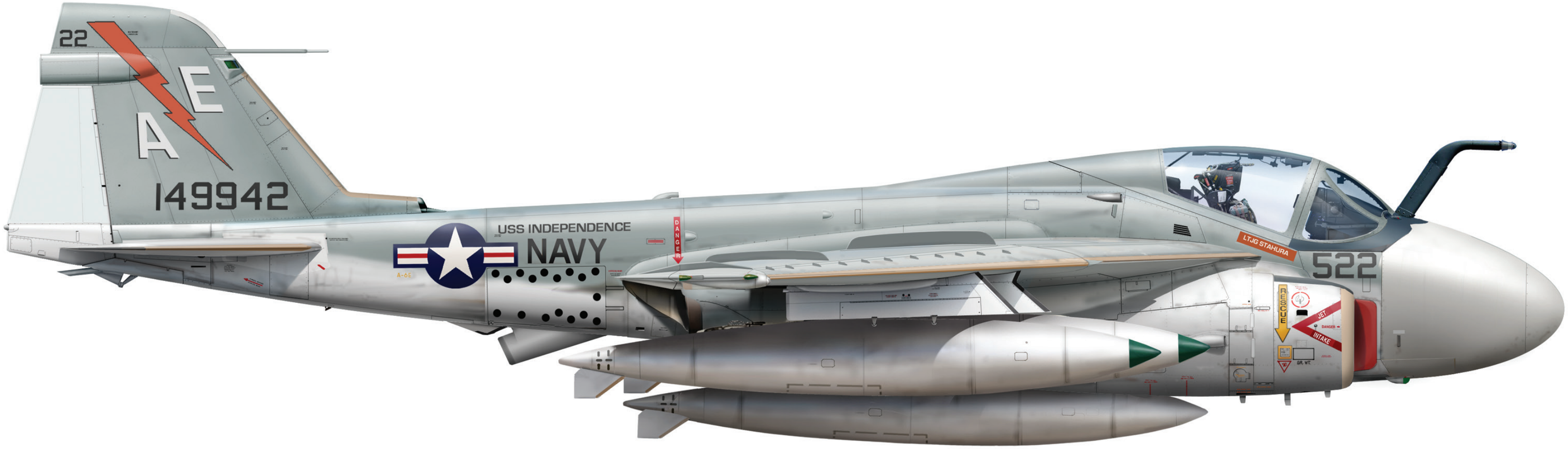

14
NE
154128
CARRIE
NAVY
VA-155
414
LT LARRY CLARK
WEEDS
RESCUE
414

20

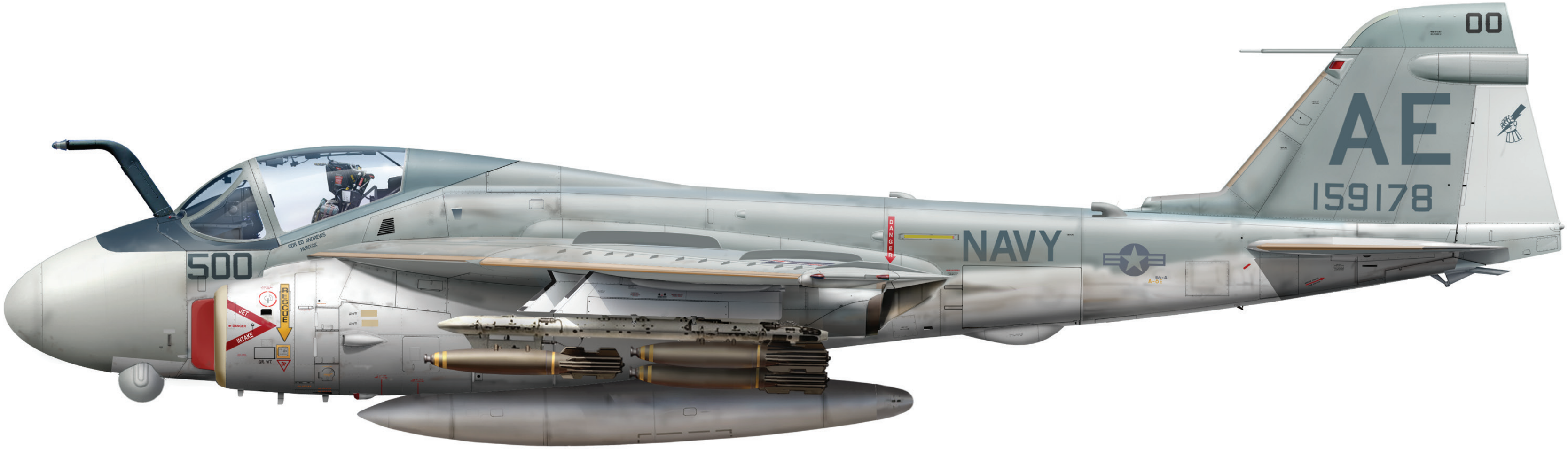
A-6E TRAM BuNo 161659/NG 501 of VA-165, USS *Ranger* (CV-61), 1994


01
NG
161659
USS RANGER
NAVY
501

21
KA-6D BuNo 149942/AE 522 of VA-176, USS *Independence* (CV-62), 1975


22
AE
149942
USS INDEPENDENCE
NAVY
DANGER
LTJG STAHURA
522
RESCUE
JET
INTAKE

22
A-6E TRAM BuNo 159178/AE 500 of VA-176, USS *Independence* (CV-62), 1984


00
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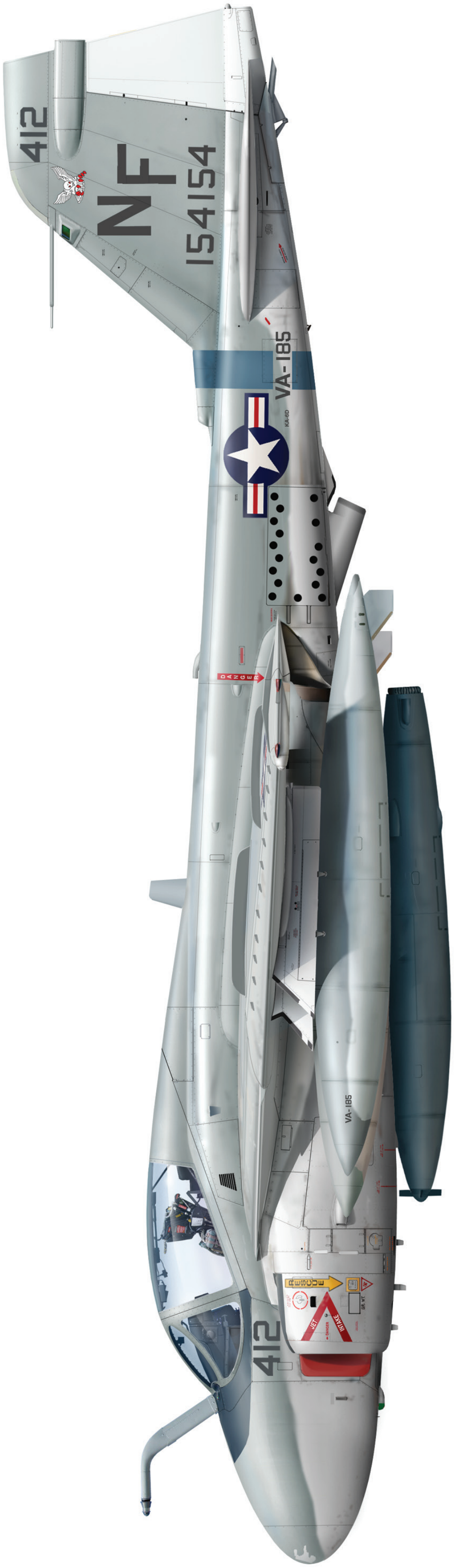
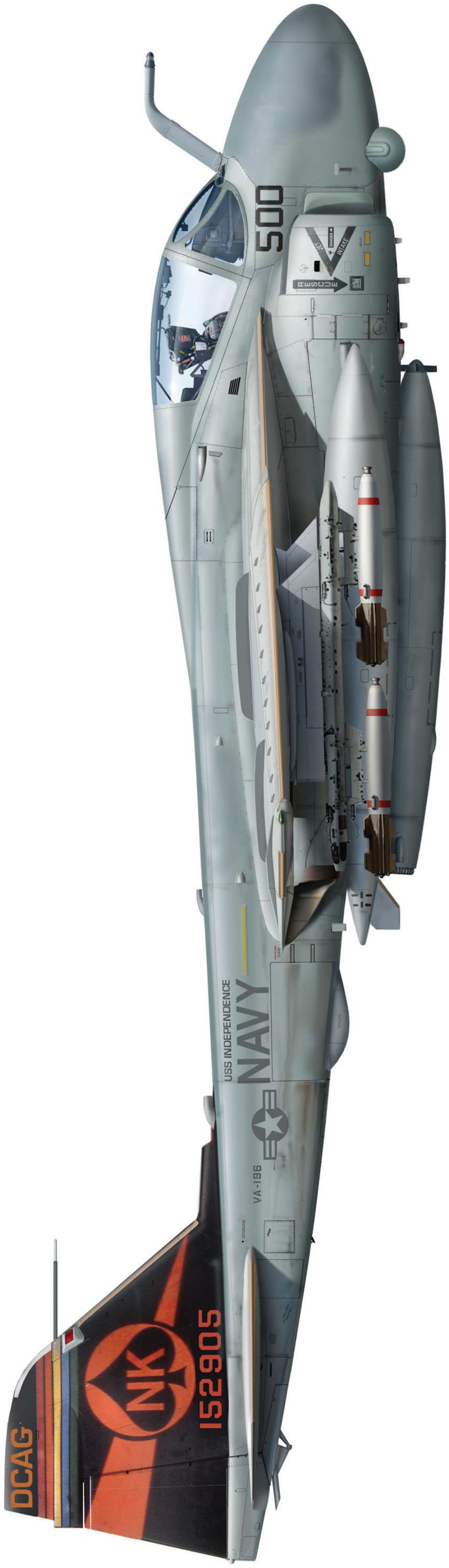
DANGER
500
RESCUE
JET
INTAKE

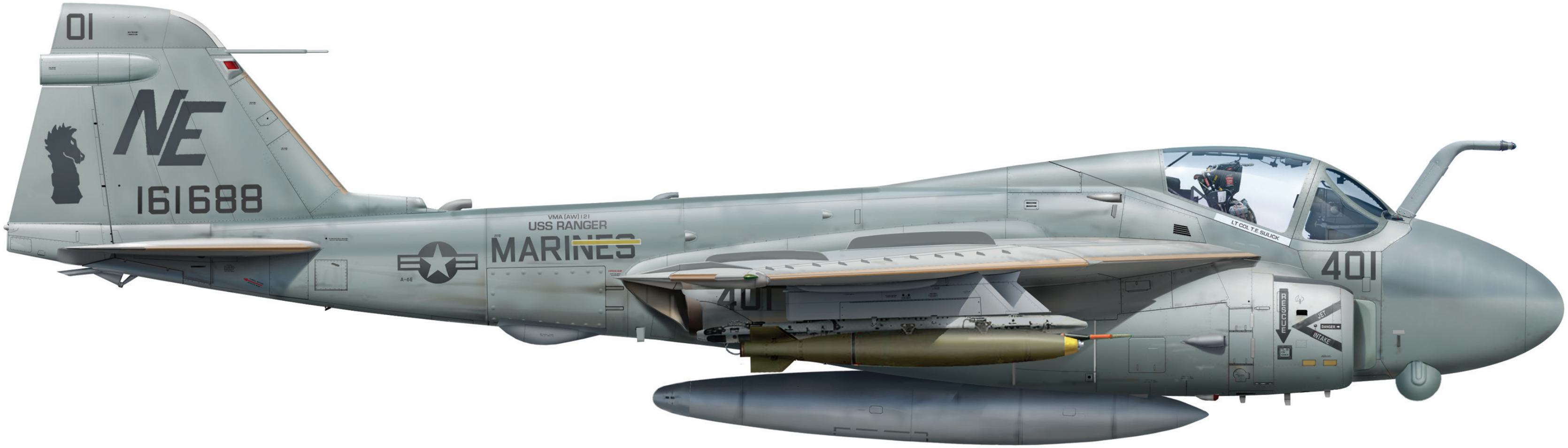

412
NF
154154
VA-185
KA-6D
DANGER
RESCUE
JET INTAKE
VA-185
412

23
KA-6D BuNo 154154/NF 412 of VA-185, USS *Midway* (CV-41), 1991

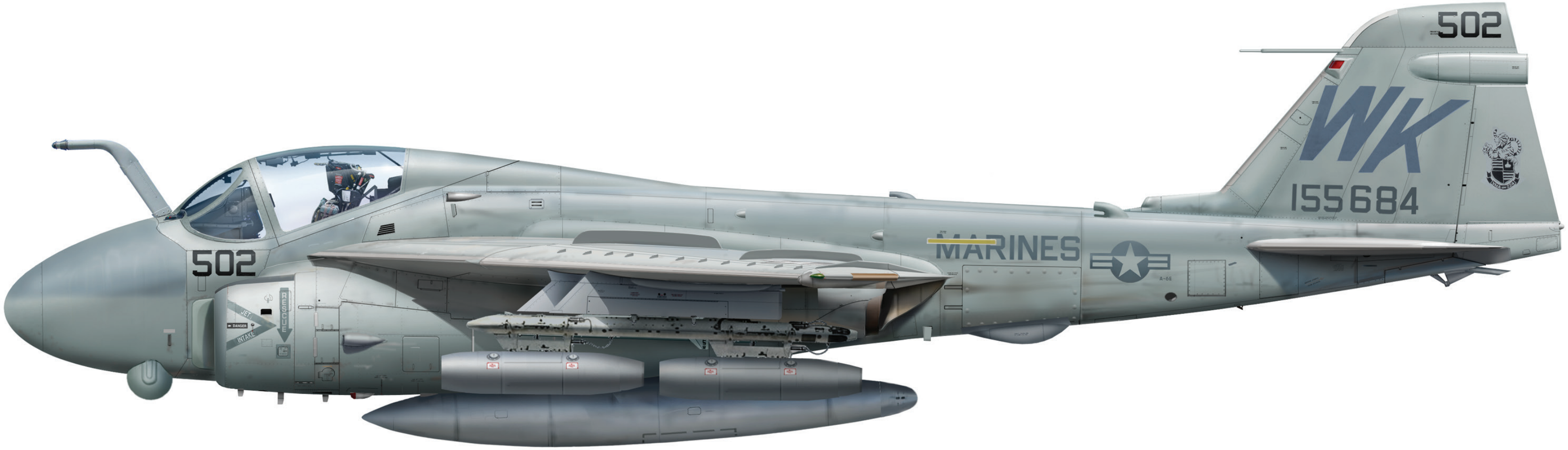

500
RESCUE
INTAKE
NAVY
USS INDEPENDENCE
VA-196
NK
152905
DCAG

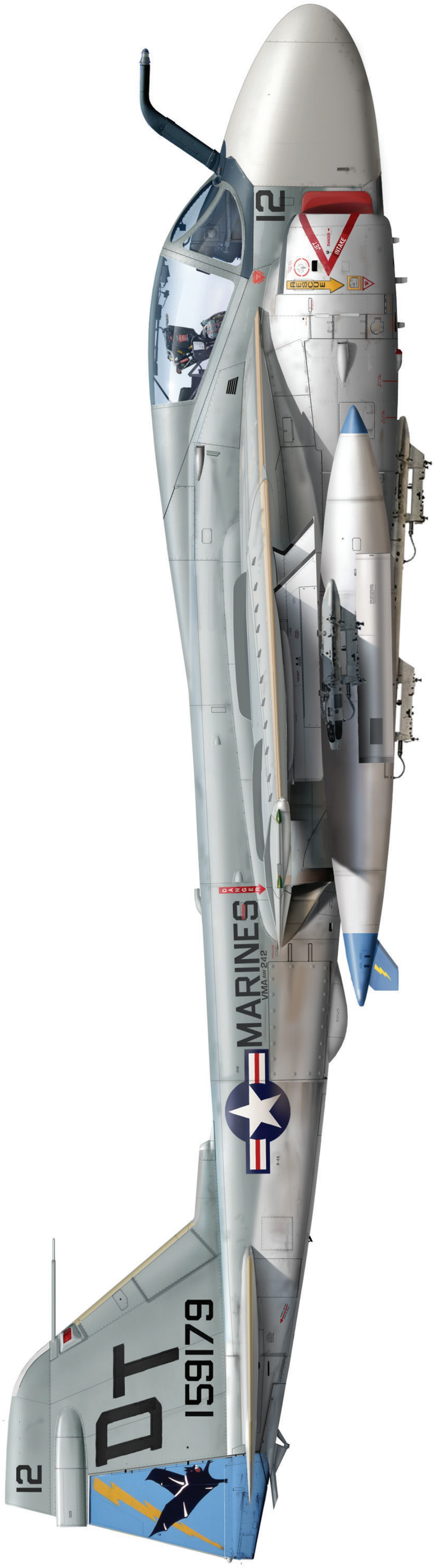
24
A-6E TRAM BuNo 152905/NK 500 of VA-196, USS *Independence* (CV-62), 1990

25
A-6E TRAM BuNo 161688/NE 401 of VMA(AW)-121, USS *Ranger* (CV-61), 1985

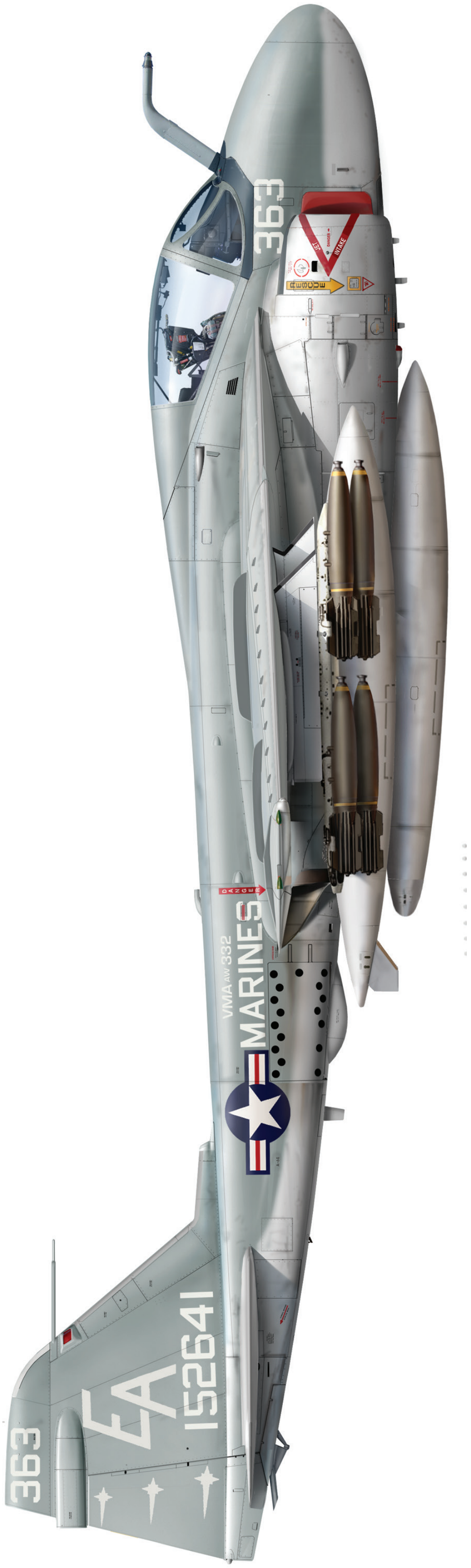

01
NE
161688
VMA(AW)121
USS RANGER
MARINES
401
LT COL T.E. SULICK
RESCUE
JET
DANGER
INTAKE

26
A-6E TRAM BuNo 155684/WK 502 of VMA(AW)-224, Shaikh Isa, Bahrain, 1991


502
WK
155684
MARINES
502
RESCUE
JET
DANGER
INTAKE

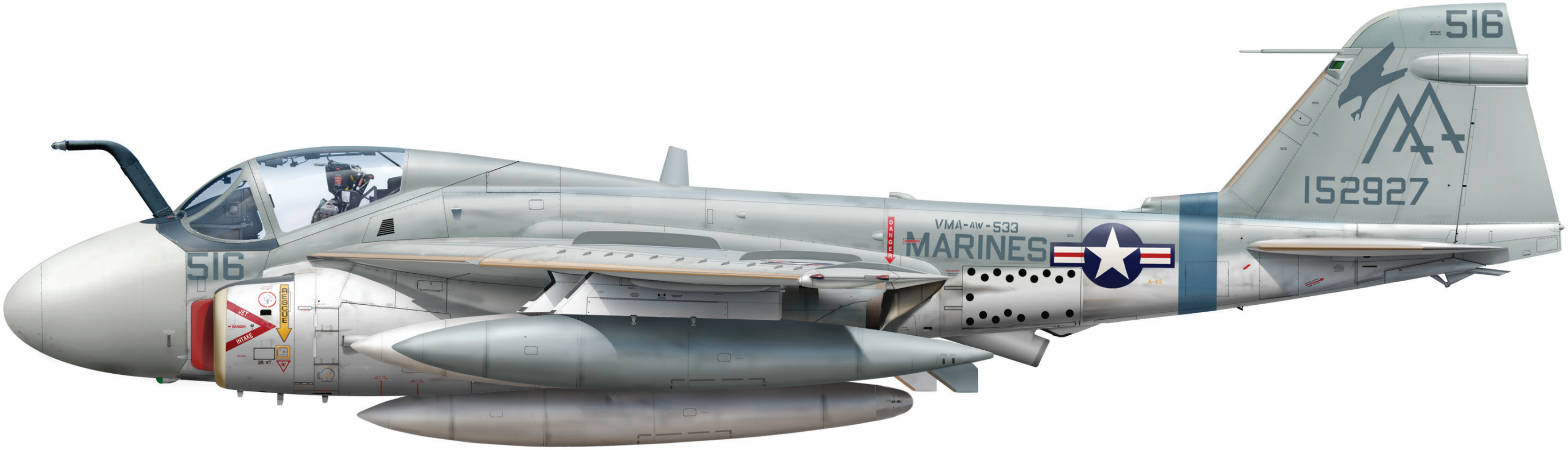

12
DANGER
MARINES
VMA(AW)-242
DT
159179
12

27
A-6E BuNo 159179/DT 12 of VMA(AW)-242, MCAS El Toro, California, 1978

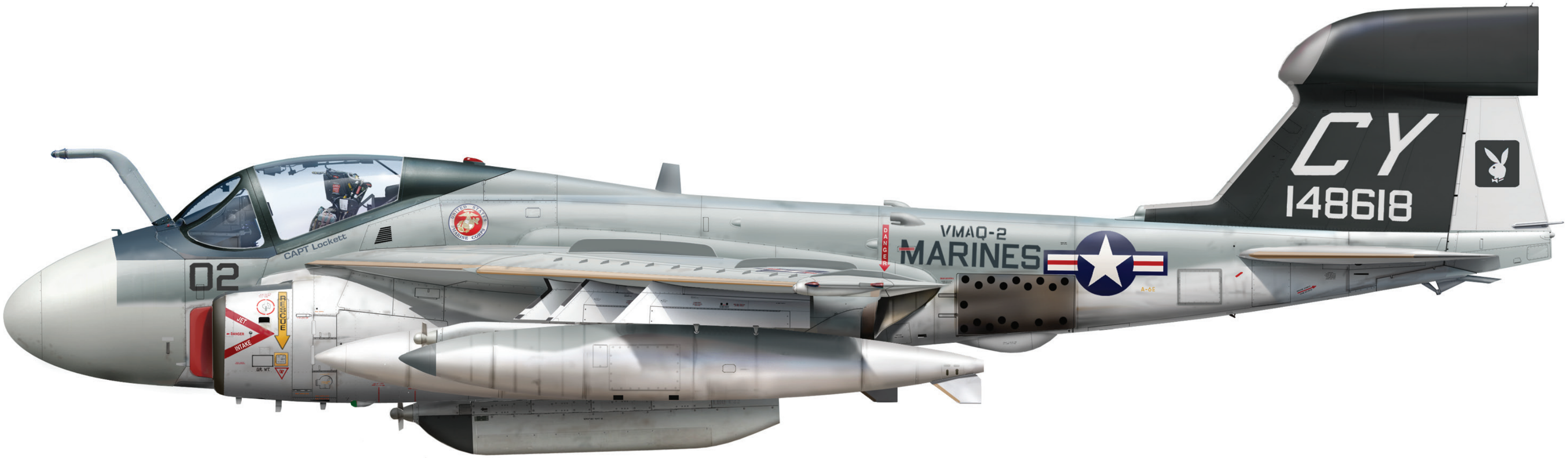

363
DANGER
VMA AW 332
MARINES
EA
152641
363

28
A-6E BuNo 152641/EA 363 of VMA(AW)-332, MCAS Iwakuni, Japan, 1981

29
KA-6D BuNo 152927/AA 516 of VMA(AW)-533, USS *Saratoga* (CV-60), 1984


516
152927
VMA-AW-533
MARINES
DANGER
RESCUE
JET
DANGER
INTAKE
516

30
EA-6A BuNo 148618/CY 02 of VMAQ-2, MCAS Cherry Point, North Carolina, 1977


CY
148618
VMAQ-2
MARINES
DANGER
CAPT Lockett
RESCUE
JET
DANGER
INTAKE
02

Corsair IIs would remain over water keeping the Libyan air defence force's heads down (they were ably assisted in this role by the EA-6Bs of VMAQ-2 Det Y, which was also part of CVW-1), the 'Blasters' would go over the beach. Among the NFOs serving with VA-34 on this deployment was Lt(jg) Joe Weston, a young B/N who had graduated from the University of Florida in 1981. He then entered VT-86 and wanted to be an A-6 B/N from the very start. He joined VA-34 just prior to cruise;

'We were loaded with talent – our CO was Cdr Rich "Cool Breeze" Coleman, who'd flown combat with VA-35 in Vietnam in 1972. We also had, unknown to us at that time of course, four future Admirals in the ready room, namely Lou Crenshaw, Joe Kuzmik, Dee Mewbourne and "T C" Cropper. We went right into FONOPs on arrival in the Med, and planned for a number of potential targets in Libya. We weren't actually told our final targets until the day of the strike, as higher authority split things up between the Navy and Air Force F-111s coming out of England.

'VA-34 got the Jamahiriya barracks in downtown Benghazi. My pilot was Lt Steve Sullivan, and we were No 4 of six being launched. Our plan was to go as a "bomber stream" with six aircraft following each other at low altitude. Once we got back we realised that there was probably a better way to do this as we'd actually increased our predictability from the ground.'

Nevertheless, their plan worked well that night.

'We carried out a covey launch [rapidly shooting the division off from all four catapults], hit the tanker and proceeded to the target at 100-200 ft. This is what we'd trained for – low-altitude night penetration. I was in the radar boot most of the flight, only occasionally looking out. We had a load of 16 Mk 82 Snakeyes on board and a centreline tank, and we were supposed to be doing 450 knots. At some point I came out of the boot and saw that we were doing only 430. I asked "Sully" if the throttles were at military. He responded with something to the effect that they'd been at the stops since the tanker, and that was all the aircraft would do that night.

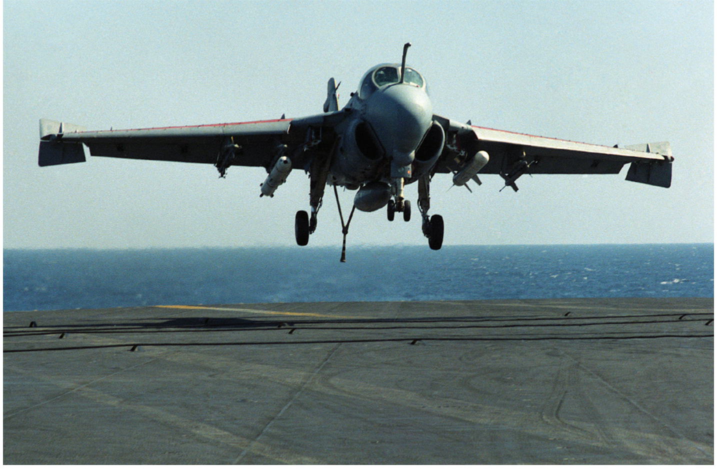
'We had both Shrike and HARM shooters supporting us from VA-72 and VA-46, respectively, as well as Marine EA-6Bs from VMAQ-2. The actual time over the beach went well, with everyone dropping their weapons and making it back to the water. AAA wasn't that heavy, and although we saw a couple of SAMs, they didn't seem to be guiding. Once over the water we started climbing and the F-14s deloused us. That was about it.'

Joe Weston made two cruises with VA-34 and later flew with test and evaluation unit VX-5 from Naval Air Weapons Station China Lake, in California, before leaving the US Navy.

All six of the 'Blasters' involved were able to drop their bombs, officially damaging the barracks as well as a MiG parts warehouse located nearby. They safely returned to the carrier.

Over on *Coral Sea*, by now dubbed the 'Ageless Warrior', eight VA-55

Coral Sea ended its remarkable career deploying with the Sixth Fleet in the Mediterranean, the veteran carrier having a 'front-row seat' for operations off Libya in 1986. The vessel is seen here underway with CVW-13 embarked, apparently in late 1985 before the air wing was joined by five Prowlers from VAQ-135. At least 11 VA-55 'War Horse' Intruders can be seen in this view (*US Navy*)



VA-55 ‘War Horse’ A-6E AK 501 BuNo 159317 recovers aboard *Coral Sea* in an official photograph taken on 22 March 1986 while the carrier was operating off Libya. The aircraft carries a SUCAP load consisting of a Harpoon and two Rockeyes, as well as an AIM-9 for self-defence, an empty MER on station five and a centreline fuel tank. This combination was light enough for the jet to land back onboard the carrier without the crew having to jettison any ordnance in order to get down to recovery weight (*US Navy*)

Intruders were catapulted into the night along with F/A-18A HARM shooters and VAQ-135 Prowlers.

Representative of the legion of men who kept the Intruder airborne was Charles ‘Chuck’ Berlemann, who spent almost his entire career in the A-6 community. Hailing from Collinsville, Illinois, he had enlisted in the US Navy in 1966 and opted for the Aviation Fire Control Technician rate. He was an early member of VAH-123’s A-6 department and moved to new Intruder RAG VA-128 when it was formed. After a couple of years out of the US Navy, Berlemann returned and joined the ‘Boomers’ of VA-165 at Whidbey – he stayed with the unit for six years, rising to Chief Petty Officer along the way. Berlemann subsequently served on the staff of the Whidbey wing, where he was heavily involved in the introduction of TRAM to the local A-6 squadrons. From there he transferred to Oceana for another sea tour, now with VA-34, and then helped establish VA-55 in 1983 as a Warrant Officer (WO).

‘I loved the Navy,’ Berlemann said. ‘I felt like I was part of a professional sports team, and that what I did really mattered. The night prior to the Libya strikes the skipper asked me to talk to the enlisted men in the shops and tell them that what they did mattered. We already had a reputation for having well prepared jets, and the aircraft that went over the target hit everything they aimed at. When we heard that all of our aircraft were feet wet after bombing Libya we were ecstatic.’

Chuck Berlemann retired as a WO3 in 1990.

While the men who flew the aircraft frequently got the most notice, working in the background were shops full of sailors who kept the Intruder’s complex systems ‘up’ and ready for flight. Frequently toiling in terrible conditions with variable parts support, the maintainers rarely got the credit they deserved for their part in making squadron operations successful. As was frequently stated, only half tongue-in-cheek, in reference to aircrew, ‘It takes a College education to break an Intruder and a High School education to fix it.’

For the ‘War Horses’, the results of their night’s work was a heavily cratered runway and the destruction or damage of multiple aircraft located on the tarmac, including several MiG-23 ‘Floggers’. The USAF F-111Fs hit their targets as well, and benefiting from a much better video recording system than the Intruder carried, had their FLIR imagery featured on news reports worldwide – a point noted by the US Navy. One F-111 was lost with its crew, while the remaining aircraft returned to England (with one diverting into Spain) after an impressive 15-hour combat flight.

While the US Navy quickly stated that *El Dorado Canyon* had achieved its limited objectives, the US State Department would later say that Gaddafi continued his sponsorship of international terrorism – a view that was supported by the destruction of a Pan Am Airlines Boeing 747 over Scotland on 21 December 1988. The violent loss of a French airliner over Chad the following year was also traced to Libyan agents. Nonetheless, the US government still asserted that 'the United States had not only the means but the will to deal effectively with international terrorism'.

PRAYING MANTIS

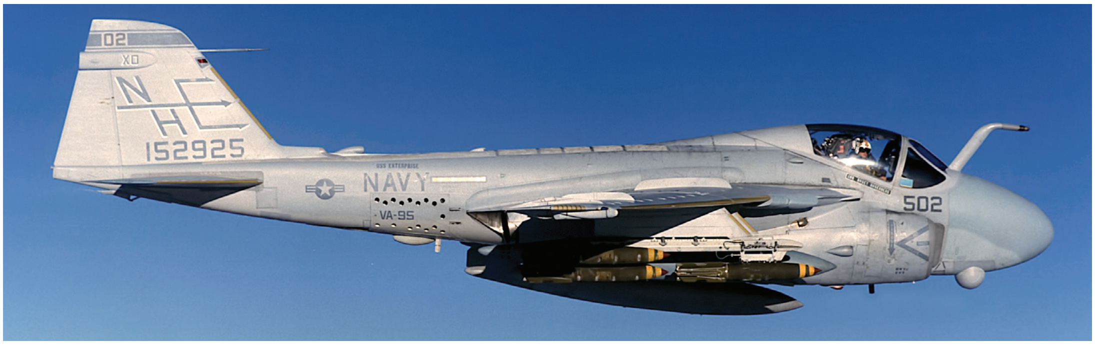
While Sixth Fleet stood off Libya, other carriers continued making long deployments to the Indian Ocean to monitor Iran. Practically every Seventh Fleet carrier made a swing through the 'IO' between 1980 and 1990, with Atlantic Fleet ships reporting as well, frequently after a transit around the southern end of Africa. These cruises were typically long and monotonous for crews, with few liberty ports to break things up. Logistical support remained a challenge as things like fresh produce and milk would frequently run out while underway. Meanwhile, the US Navy continued to develop Diego Garcia as a forward support base and work with friendly local governments – generally those threatened by Iran – for improved facility access.

Tensions had been on an edge in the Persian Gulf region since the start of the Iran–Iraq War in September 1980. The eight-year conflict was noted for each side killing large numbers of its opponents, while the Western powers (and the United States in particular) tried to keep the Strait of Hormuz and Persian Gulf open for tanker traffic. By 1987 Iran was openly laying mines throughout the gulf, which resulted in several skirmishes between US and Iranian Revolutionary Guard (IRG) units. On 14 April 1988 the frigate USS *Samuel B Roberts* (FFG-58) hit an Iranian mine and was heavily damaged. Four days later the US Navy initiated Operation *Praying Mantis* as a response to Iranian actions. Centrepiece to this action would be the *Enterprise* battle group. The 'Big E' had left Alameda on 5 January with CVW-11/VA-95 on board, and it would eventually be positioned south of the Strait of Hormuz in the Gulf of Oman.

At dawn on 18 April *Praying Mantis* kicked off with US warships and Marines seizing northern gulf oil platforms from which attacks were being launched against friendly shipping. The response by a single Iranian Navy patrol boat rapidly led to its demise by missiles launched by US naval ships.

CVW-11, meanwhile, had put up SUrface CAP (SUCAP) from sunrise, with A-6s and A-7Es ranging into the gulf to find and sink any Iranian warships that might be present. Cdr Bill Miller's 'Green Lizard' jets were

VA-95 participated in Operation *Praying Mantis* from *Enterprise* in April 1988. 'Green Lizard' A-6E NH 502 BuNo 152925 carries Mk 82 Snakeyes with steel nose plugs in this photograph. Note the ever present NATOPS pocket checklist in the B/N's windscreen quarterpanel (*US Navy*)



CDR BILL MILLER
C O
501

VA-95's CO for its WestPAC, 'IO' and Arabian Gulf cruise on board CVN-65 in 1988 was Cdr Bill Miller, who is seen here with his aircraft at Whidbey Island in July of that year shortly after returning from the deployment. He and his B/N, Lt Cdr Joe Nortz, hit *Sabalan* when it ventured into the Arabian Gulf from Bandar Abbas harbour after *Sahand* had been attacked. The frigate was left dead in the water after Nortz guided a 500-lb LGB 'right down the stack' (*Tony Holmes*)

loaded with a mix of weapons to deal with almost any situation, including Harpoon and Skipper missiles, LGBs and Rockeye cluster bombs. Corsairs from stablemates VA-22 and -94 carried Walleye and Rockeye, among other weapons. Meanwhile, F-14s from VF-114 and -213 provided CAP in case of possible visits by Iranian F-4s out of Bandar Abbas and VAQ-135 EA-6Bs monitored the electronic domain for activity.

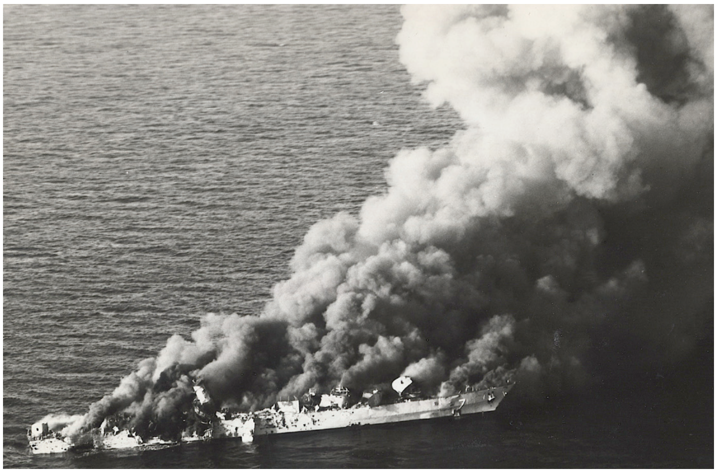
High on the list of potential targets was one of Iran's *Saam*-class frigates, *Sabalan*, which had become noted for having a captain who mocked ships he was attacking over the radio. There were four of the class in the Iranian fleet, all of them 1200 tonners built by Vosper Thornycroft in Britain in the late 1960s.

Things kicked off for the 'Lizards' when a section was directed onto a group of *Boghammers* (Swedish-built small speed boats used by the IRG for fast attack within the gulf) near Abu Musa Island by an E-2C. The Intruder crews found their quarry and rolled in with Rockeye. As one B/N later put it, 'someone had noted that they ALWAYS turned left to avoid bombs, so the gouge was to drop a little long and left'. The lead *Boghammer* did as advertised and was raked by the cluster weapons, causing the crews of the remaining four to lose their ardour and quickly return to Abu Musa.

By mid-afternoon it became known that Iranian naval units were getting underway from Bandar Abbas. CVW-11 aircraft were directed to proceed and investigate, with the lead Intruder (NH 500 BuNo 156995) being crewed by the Deputy CAG, Capt Bud Langston (former CO of VA-145), and 'Lizard' junior officer B/N 'Pappy'. The B/N quickly stated that he had a lot of radar returns that he started sorting through his FLIR. When he found one to be a probable warship Langston took the Intruder down to the deck while 'Pappy' made several calls on Guard frequency warning any Iranian units in the area that they were sailing into danger. Their first pass was 'on the deck, over 500 knots and right down the ship's port side'. It was at this point that 'Pappy' realised that his pilot had put the Iranian on *his* side of the aircraft in case they took fire. Flashes appeared from the bridge and stern – possible infrared-guided SAMs had been launched at them.

Their Rules of Engagement (they had to be fired on first before they could in turn return fire) having been met, Langston wheeled the Intruder away from the Iranian ship, dropping flares as he climbed rapidly to about 8000 ft. While he and his B/N knew the ship was one of the Iranians' four *Saam*-class vessels, they were still unsure if it was the one they were really looking for. The ship turned out to be *Sabalan*'s sister-ship *Sahand* – not that it mattered at this point.

On their first pass Langston and 'Pappy' expended a 500-lb LGB in a 40-degree dive, the weapon impacting just off the port bow. Although



The shattered remains of the Iranian *Saam*-class frigate *Sahand* were photographed by a US Navy aircraft shortly after the vessel had been engaged by VA-95 on 18 April 1988. Built for the Shah's navy by Vosper Thornycroft in Britain in the late 1960s, *Sahand* was pounded by various ordnance during the one-sided clash that resulted in the frigate being sunk. While Intruder units trained to take on vessels up to the 24,000-ton Soviet *Kirov*-class battlecruisers, the 1200-ton *Sahand* would be the largest warship the type ever sunk – VA-95 also crippled its sister-ship, *Sabalan* (*US Navy*)

it missed the ship, the bomb undoubtedly caused serious hull damage. Their next launch was their Harpoon, which was fired at a range of 15 miles and guided amidships, where it went off 'high-order'. They then fired both of their AGM-123 Skipper IIs, with the B/N placing his laser spot 'on the only part of the ship that wasn't burning', which was just forward of the bridge. The first one hit squarely on target, while the second one, apparently confused by the copious amounts of smoke being generated by the now burning wreck, missed. NH 500 then returned to *Enterprise* while other air wing aircraft arrived to deliver the *coup de grâce*, along with a single Harpoon fired by the veteran *Charles F Adams*-class destroyer USS *Joseph Strauss* (DDG-16).

While this was going on another *Saam*-class frigate was reported to be departing Bandar Abbas, and aircraft were despatched to investigate. This vessel turned out to be the high-interest *Sabalan*, and it was quickly hit by a 'Lizard'-delivered 500-lb LGB 'right down the stack', which left it dead in the water. The ship attempted to defend itself by firing several infrared-guided SAMs, none of which connected. Additional aircraft were en route to sink the frigate when a 'knock it off' call came from the Pentagon, the point having been proven. *Sabalan* was towed back into port and *Enterprise* continued to monitor things in the gulf.

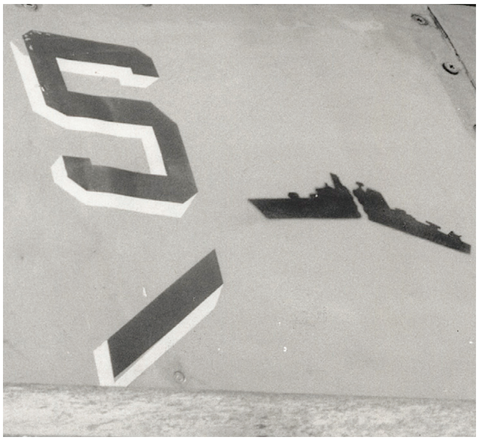
Praying Mantis was widely viewed within the US Navy as how to do business, being seen as a measure of vindication for warfighting improvements after the disastrous Lebanon raid. What nobody realised at this point of course was how busy the US Navy, and Intruders, would be in this area only two years later.

IMPROVEMENTS AND DEAD ENDS

Aircraft carriers had continued to deploy with Intruders on board through to the end of the 1980s. While air wings were rapidly replacing their Corsair IIs with Hornets, the A-6 community had introduced the System Weapons Improvement Program (SWIP) version of the TRAM aircraft. SWIP added digital enhancements that allowed the jet to employ new weapons, including AGM-65 Maverick, AGM-88 HARM and AGM-84E Stand-Off Land Attack Missile (SLAM), as well as the ALR-67 and ALQ-126B self-defence EW systems. Introduced in 1988, SWIP would be the final major modification to the Intruder series that would reach the fleet.

SWIP was developed parallel to plans to buy new wings for the Intruder, with the goal that they be made using modern carbon-fibre materials – routinely, if not quite correctly,

VA-95's NH 500 BuNo 156995 was adorned with this modest *Sahand* victory silhouette near the 'Safety S' that was applied to all 'Green Lizards' jets at this time. This aeroplane was responsible for inflicting most of the damage on *Sahand* (*Tony Holmes*)



called 'plastic' wings in the fleet. It was no secret in the Medium Attack community that after years of combat and high-G pull-outs, there was an issue with metal fatigue and brittleness in many of the A-6s. The loss of wings in several aircraft while dive-bombing only reinforced the seriousness of the situation. Boeing-Wichita got the contract for the new structures and immediately ran into production problems that meant the initial SWIPs would retain their original spans. The first Boeing-modified aircraft would fly in April 1989, and the new 'plastic wings' would soon flow to the fleet.

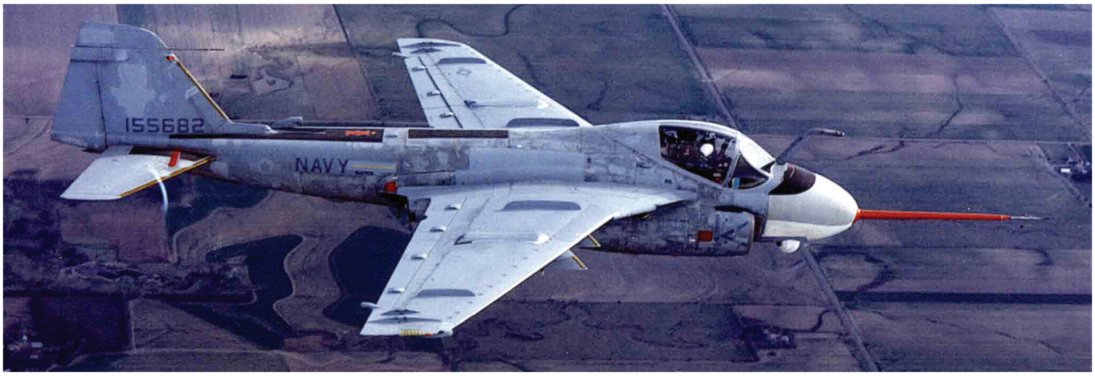
Other tactical improvements entered the fleet throughout this period, including Night Vision Goggles (NVGs), also called Night Vision Devices (NVDs),which greatly enhanced crew situational awareness in the dark. The use of NVGs required a significant amount of crew training, as well as modifications to the cockpit lighting, but the move proved to be a good one. VA-65 became the first fully NVG-qualified squadron in September 1986.

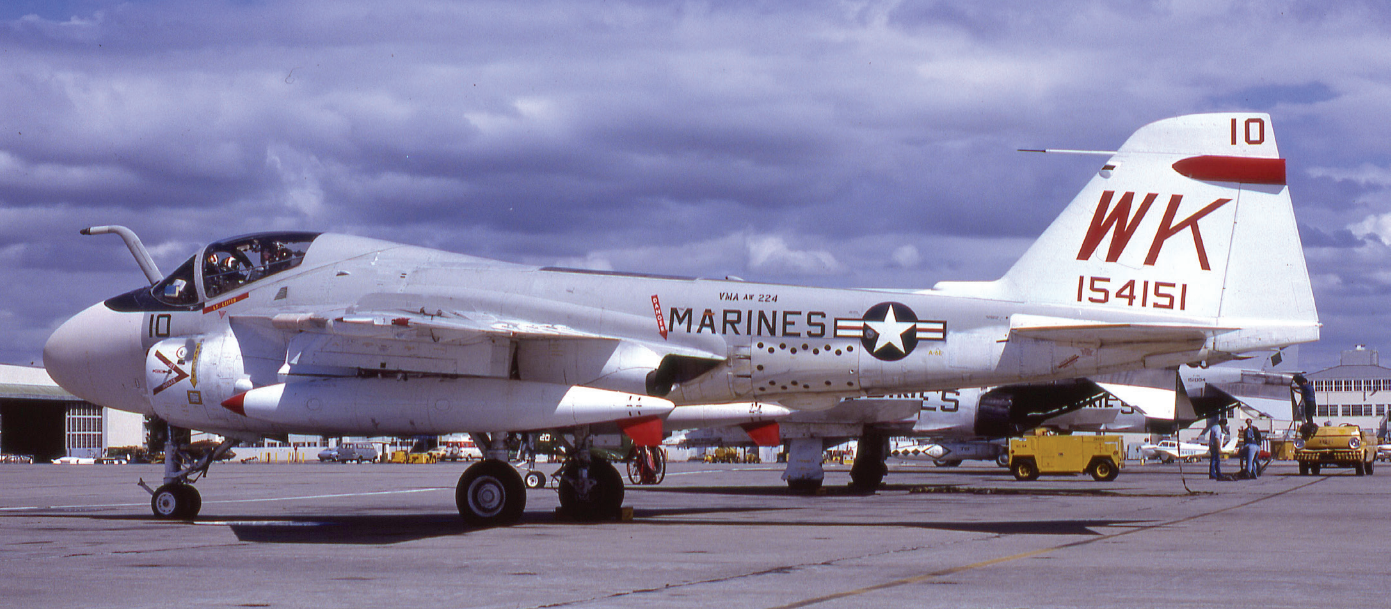
Physical enhancements to the airframe were also being pursued. Grumman had long proposed a new version of the Intruder, designated the A-6F, which would include new General Electric F404 turbofan engines in place of the venerable J52 turbojets, as well as a fully digital weapons system, new cockpit displays and two additional wing stations. The first contract for the A-6F was let in Fiscal Year 1984, with up to 150 new aircraft promised by the end of the decade, as well as an aggressive E-model rebuild programme. The first A-6F flew in August 1987 and a second was delivered before the entire programme was cancelled as part of the Fiscal Year 1988 budget. The point was made that John Lehman, the aircraft's primary sponsor, was no longer SECNAV, and that 'there's something better coming' in the form of a very highly classified programme called the Advanced Tactical Aircraft (ATA). With only five airframes built, the A-6F got the chop in favour of ATA.

Attempts by the Intruder desk to move at least some A-6F capability into existing airframes quickly led to the proposed A-6G, which, among other system enhancements, would have put the Prowler's J52-P-408 motors in the airframe. It too had died by 1990.

While these fights were going on inside the Office of the Chief of Naval Operations and at NAVAIRSYSCOM, war clouds were again brewing in the Middle East, and the Intruder would be called on once more to go into the breach.

The final version of the A-6E to enter service was the SWIP, which introduced a number of system and weapon advances to the Intruder. Slightly delayed were new carbon-fibre wing sections built by Boeing in its Wichita plant in Kansas. BuNo 155682 was the first test aircraft to fly with the new wings, and it is seen here with test equipment installed during a flight over the Kansas countryside in April 1989. It also shows one of the primary visual differences for the SWIP – the two rear-looking antennas associated with the ALR-67 self-defence EW system extending from the wing trailing edge (*US Navy*)





The ‘Bengals’ of VMA(AW)-224 flew off *Coral Sea* in 1971-72 during the conflict in Vietnam and, 20 years later, saw further combat in *Desert Storm*. This is A-6E WK 10 BuNo 154151 in September 1977. It would be lost whilst still serving with the squadron at Fallon on 1 February 1978 when it impacted the ground during night bombing – one crewman was killed (*Michael Grove*)

CHAPTER THREE

THE MARINES

The US Marines Corps ended the Vietnam War with six All Weather Attack (VMA(AW)) squadrons based at three locations. Marine Corps Air Station (MCAS) Cherry Point, in North Carolina, was home to both the 2nd Marine Air Wing (MAW) and the Corps’ sole A-6 training squadron, VMAT(AW)-202, with 12 A-6As and a pair of TC-4C Academe B/N trainers. Three deployable units were there as well, VMA(AW)-121, -224 and -332, with an assigned strength of 12 A-6As each. The first A-6E would arrive at the RAG early in 1974, and more would follow.

3rd MAW, which covered the Pacific regions, controlled VMA(AW)-242 at MCAS El Toro, in California, while 1st MAW included VMA(AW)-533, forward deployed to Iwakuni, Japan, within its ranks. A seventh Intruder squadron, VMA(AW)-225, had been deactivated in June 1972 following almost three-and-a-half years of combat in Vietnam.

Things remained largely stable for Marine Intruders until November 1975, when the ‘Hawks’ of VMA(AW)-533 returned to Cherry Point from Japan. The US Marine Corps had instituted a new rotational concept called the Unit Deployment Program (UDP) to cover the Far East, with F-4, A-4 and A-6 squadrons rotating from the US on six-month deployments to Iwakuni, normally serving with Marine Air Group (MAG) 12 in-theatre. The first Intruder unit to participate in UDP was VMA(AW)-224, which flew without equipment to Japan as VMA(AW)-533 moved out. The

RIGHT
A division of A-6As from VMA(AW)-242 fly off the coast of California in November 1975. The ‘Bats’ were the first Marine Intruder unit to be based with 3rd MAW at El Toro, California, and had earned an enviable combat record in Vietnam (US Marine Corps)

Cherry Point, North Carolina, was the home for Marine Intruders for many years, having three deploying squadrons as well as its own RAG (VMAT(AW)-202). This early-build A-6E, belonging to VMA(AW)-332, was photographed at its home base in late 1978. The jet still boasts full-colour markings, befitting that period. VMA(AW)-332 was known both as the 'Polka Dots' (which dated from its F4U Corsair days) and, later, the 'Moonlighters'. It would never see combat as an Intruder unit, however, turning in the last of its steeds for F/A-18D Hornets in 1993 (*US Marine Corps*)

'Bengals' took over 11 A-6Es that were left for them by VA-52, which was ending a WestPac deployment on board *Kitty Hawk*.

US Marine Corps deployments to the Far East largely dealt with support for the 1st Marine Division based in Okinawa, with North Korea viewed as the primary threat. Not surprisingly, a lot of work would be done over Okinawa and South Korea, although squadrons frequently visited locations like Cubi Point, in the Philippines, and even Australia. Between 1975 and the end of the A-6 UDP in 1992, Marine Intruder squadrons made at least 28 trips to Japan, with aircraft often being swapped between units in order to cut down the number of Trans-Pacific sorties required. Other slight shifts occurred through the 1970s as VMA(AW)-121 moved to El Toro at the end of a UDP stint, joining VMA(AW)-242 there in 1977-78. The latter unit, known as the 'Bats', would fly the last Marine A-6A models, transitioning to 'Echoes' in 1977. The first Marine A-6E TRAMs were delivered to VMA(AW)-533 two years later, and were deployed to Iwakuni for UDP in April 1980.

MARINE INTRUDERS UNDERWAY

The Intruder build-up period in the US Navy during the Lehman years led to the US Marine Corps placing two squadrons – one on each coast – in carrier air wings. While obviously not the first fleet use of the Marines' A-6s (VMA(AW)-224 had deployed in *Coral Sea* to Vietnam in 1971-72 and EA-6As had served on several ships during the 1970s), the assignment of these aircraft to carriers was still considered highly unusual in some parts.

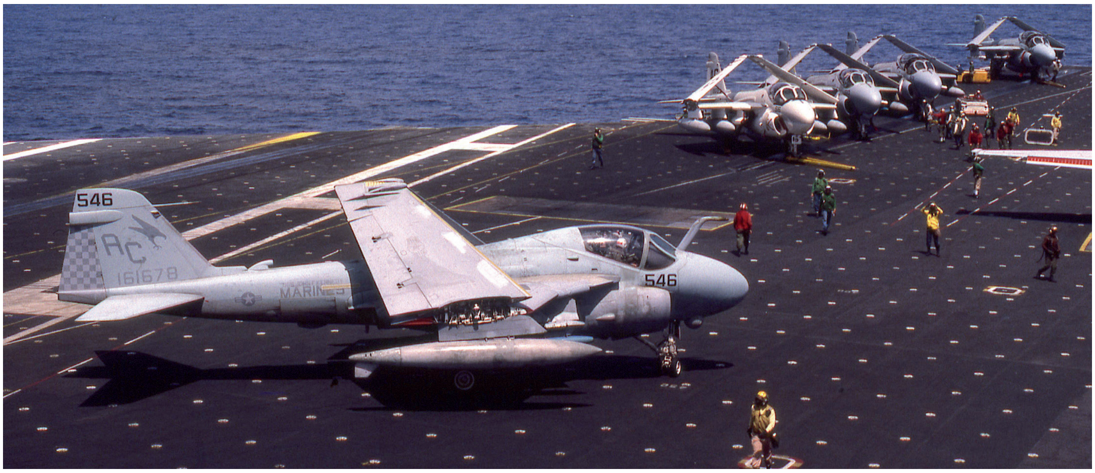
First to go were the 'Hawks', who chopped to CVW-17 in place of VA-85 in late 1983 and deployed in

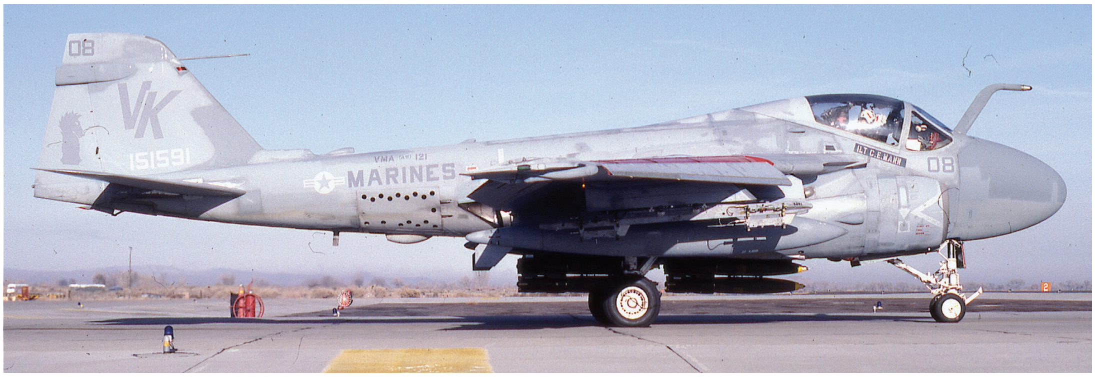
Saratoga for a Mediterranean cruise between April and October 1984 with an assigned strength of ten A-6Es and a quartet of KA-6Ds. The tanker assignment was very unusual as VMA(AW)-533 was only the second, and last, Marine unit to deploy with the type, the other being VMA(AW)-224 during Vietnam.

Lt Col Jim Clark, an NFO, was CO of a Marine ready room that also included two US Navy A-6 crew for additional carrier experience. They provided the traditional Medium Attack component for CVW-17, with two A-7E and a pair of F-14A squadrons rounding out the strike portion of the wing. The US Marine Corps presence on board was further strengthened by VMAQ-2 Det Y, making the second Marine EA-6B carrier-based trip to the Mediterranean. Upon the squadron's return to Cherry Point the 'Hawks' were kept out of the UDP rotation so that they were available for future carrier duty, with movement to the *John F Kennedy*/CVW-3 team coming in 1985. In this case VMA(AW)-533 was one of two Intruder units in the air wing's new 'All-Grumman' configuration as CVW-3 became the first of the Lehman era's 'dual A-6' wings to actually deploy. VMA(AW)-533 joined VA-75, with each unit having 13 aircraft. The 'Sunday Punchers' had all four KA-6Ds while the 'Hawks' were equipped with A-6E TRAMs exclusively.

Late in the work-ups a six-aircraft detachment of A-7Es from VA-66 was added to the air wing specifically to provide HARM capability – something the Intruders did not have yet. The Corsair IIs were embarked in spite of HARM-qualified VAQ-140 being on board as well. The cruise turned into a pretty standard trip to the Mediterranean, with numerous port calls, although it was also marred by the loss of two 'Hawk' jets and their crews. VMA(AW)-533 would make a return engagement to the Mediterranean with the same ship and air wing in 1988-89, this cruise being punctuated by VF-32 Tomcats shooting down two Libyan MiG-23s. The 'Hawks' would be home by February 1989, ending their tenure as the most carrier-experienced Marine Intruder squadron in history. It would also be the last time an 'All-Grumman' air wing went to the Mediterranean, with *Kennedy*'s CVW-3 reverting to A-7s (from VA-46 and -72, formerly with CVW-7 – these were the last Corsair II units in the fleet by then) upon its return to CONUS.

The first Marine Intruder unit to be assigned to a US Navy carrier air wing after Vietnam was VMA(AW)-533, which joined CVW-17 on board *Saratoga* in 1986. Two years later it was moved to CVW-3 and *Kennedy*, where it joined VA-75 in an 'All-Grumman' air wing. 'Hawk' AC 546 BuNo 161678 is shown here taxiing out of the landing area during work-ups off Virginia in March 1988 on board CV-67 prior to the unit's second, and last, deployment with CVW-3 later that same year. The squadron would subsequently move to 400 series side numbers either before or during cruise (*Rick Burgess*)





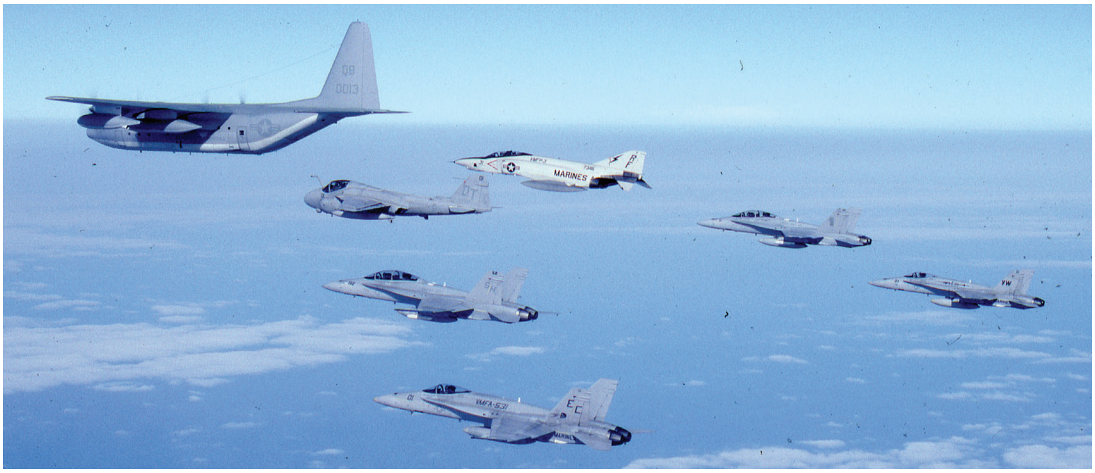
VMA(AW)-121 A-6E CAINS VK 08 BuNo 151591 taxis at Fallon in November 1983 with a load of Mk 82 Snakeyes on the centreline. It shows heavily weathered TPS finish. This jet was another former A-6A and B modified to E standards, and it would be stricken in 1994. VMA(AW)-121 went to the boat in 1986, joining VA-145 as a member of CVW-2 embarked in *Ranger*. The Green Knights remained a member of the air wing through to late August 1989, making two NorPac and two WestPac/'IO' cruises with CV-61 during this period (*Mike Grove*)

On the west coast, the 'Green Knights' of VMA(AW)-121 joined CVW-2 and *Ranger* in 1985 and remained with that pair for more than three years. During this period the ship made several short trips to the western Pacific as the fleet tested a 'surge' concept where a ship/air wing would maintain high levels of readiness and be prepared to deploy at any time. This was opposed to the normal US Navy readiness standard, which is more of a sine wave of preparedness. CVW-2 was also in an 'All-Grumman' arrangement, with VA-145 being the other Intruder squadron and no Light Attack component assigned. As of September 1987 the two squadrons made up roughly 26 per cent of the air wing's numbers, with 22 A-6Es (and no KA-6Ds) assigned among 82 aircraft in total.

Over a three-year period (between August 1986 and August 1989) CVW-2 and *Ranger* would make four deployments to WestPac, the Northern Pacific or 'IO'. Two of these would be short two- to three-month 'surge' cruises, with the other two being full six-month affairs. While the 'surge' concept was novel and, theoretically, meant that work-ups could be greatly reduced, the reality was that it was hard on both men and equipment, as everyone was expected to be at the peak of their game through the entire period. It was during one of the surge trips that the 'Green Knights' endured the kind of 'blue water' drama that only those that fly around the carrier can truly understand.

On 9 March 1987, *Ranger* and CVW-2 were conducting night operations in the mid-Pacific Ocean well west of Hawaii. The seas were alive with heavy swells, causing the deck to pitch rather dramatically. This led to the Landing Signal Officers (LSOs) using the Manually Operated Visual Landing Aid (MOVLAS) instead of the normal Fresnel Lens as the pilot's visual landing aid. With MOVLAS, the LSO manually controlled the 'meatball' to show the approaching aircraft its vertical approach angle.

Recovery was in progress at about 2100 hrs, with the F-14s and most of the Intruders already aboard. Next in line was 'Green Knight' A-6E NE 405 (BuNo 155679), being flown by Capt Randall 'Atlas' McNally and his B/N, Capt Frank Wolcott. On their first pass the ship's deck abruptly came up to meet them, which snapped the Intruder's port main wheel assembly off, while also causing a 'bolter', where the tailhook fails to engage any of the ship's four wires. The damaged A-6 clawed back into the air with what was now a real emergency, as the gear could not be retracted – a



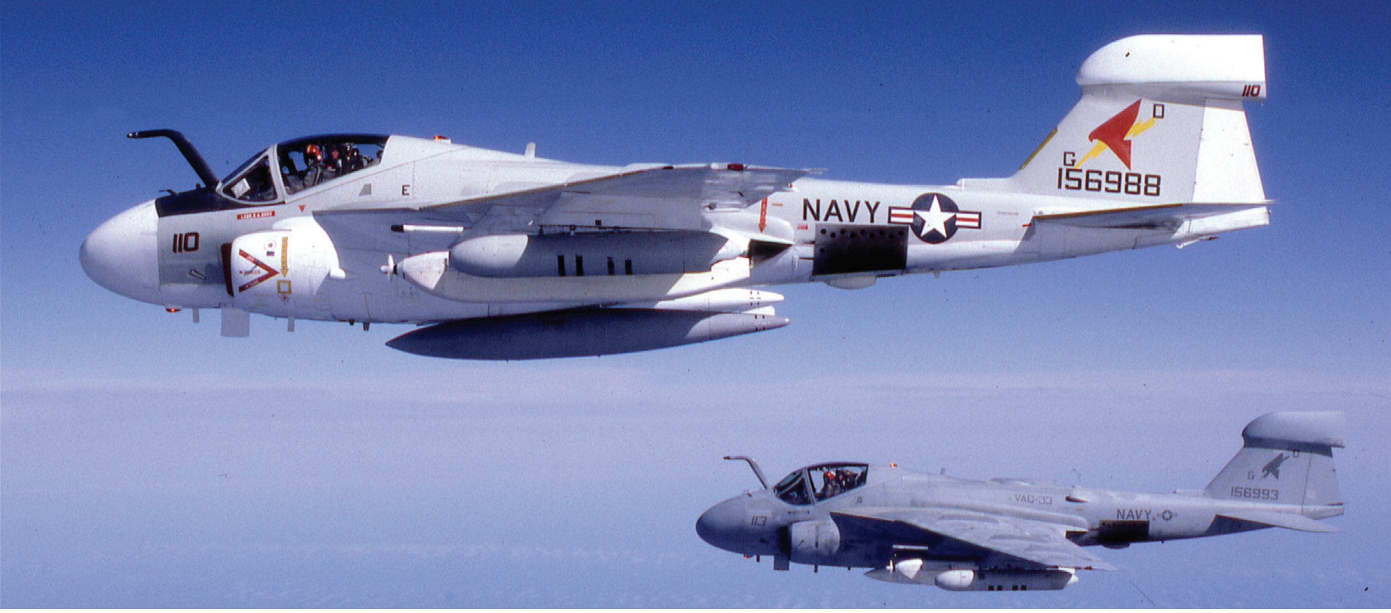
The Marines started transitioning Intruder squadrons to the F/A-18D in 1990. This photograph – taken in July of that same year – of MAG-11 squadrons from El Toro shows the first unit to get F/A-18Ds, VMFA(AW)-121, and a VMA(AW)-242 Intruder, the latter unit transitioning to the two-seat Hornet in late 1991. They are accompanied by a VMGR-352 KC-130, VMFP-3 RF-4B and Hornets from VMFA-531, VMFA-314 and VMFAT-101 (*Bob Lawson*)

condition that made divert impossible as well. The decision was quickly made to send those aircraft that had the fuel – E-2s, S-3s and an EA-6B – to either Hawaii or Midway (which itself was more than 500 miles away) and take the Intruder into the barricade. The winds were at 30 knots and the aircraft's configuration was three external fuel tanks with empty multiple ejector racks (MERs) on the inboard stations.

Critical to the effort was the air wing's senior LSO, Cdr John Roach. 'Bug', as he was universally known, was a Vietnam-era F-8 Crusader pilot and considered one of the, if not *the*, finest 'Paddles' in the entire US Navy. Now flying F-14s, 'Bug' was already a legend who had helped rescue sailors from a burning hangar at Miramar in December 1969 after a pilotless F-8 had flown into it. Known for his calm and unflappable demeanour, Roach discussed what he expected from McNally and how to work a wounded aircraft's approach into the barricade with a badly heaving deck. The actual event was almost routine as the Intruder took the net at 2125 hrs and eventually returned to flight duty. The PLAT tape of the event has since become viral on the internet and is still used as 'the right way to work the barricade' at the US Navy's LSO school in Oceana.

McNally would later leave the Marines and fly for Delta Airlines, also becoming a reserve US Navy pilot with Intruder-equipped VA-304. On 5 April 1994 McNally would perish in a crash at NAS Alameda with B/N Lt Cdr Brian McMahon. Legendary 'Bug' Roach himself would die on 2 October 1991 following an unsuccessful ejection from a VF-126 A-4E after its engine failed off San Diego.

The 'Green Knights' left CVW-2 as a well-respected squadron, although their days as an Intruder unit were numbered as they had been identified as the first Marine All Weather Attack squadron that would transition to the new F/A-18D Hornet, which was slated to eventually replace all of the Corps' A-6s. While the D-model was originally intended by the US Navy to be a two-seat trainer version of the single-seat C-model, the Marines took the control column out of the rear cockpit and modified it for an NFO, who would carry out the functions of a B/N but be called a Weapons System Operator. The squadron started turning over its Grumman aircraft in 1990, signalling the beginning of the end for US Marine Corps Intruders.



CHAPTER FOUR

EA-6A

The 'Firebirds' of VAQ-33 received their first EA-6As in 1979 and used them as electronic adversaries, providing EW training for the fleet. They would retire the last of the type from service in 1993, having been the only Regular Navy unit to fly the EA-6A. Here, a section flies off San Diego in April 1984. GD 110 BuNo 156988 would be lost to a total hydraulic failure off Florida on 11 February 1991, with both crew ejecting. GD 113 BuNo 156993 (the 27th, and last, EA-6A built) wears TPS. Both aircraft are hauling a mixed load of ALQ-76 jamming pods and ALE-43 chaff dispensers (*Bruce Trombecky*)

As of mid-1975 the EA-6A 'Electric Intruder' remained a small force of only 23 aircraft divided among three US Marine Corps Composite Reconnaissance (VMCJ) squadrons, which flew them alongside RF-4B Phantom IIs. On 1 July 1975 the Corps re-organised these units, with the result being the EW and photo mission areas were separated and placed in distinct squadrons. This left Cherry Point-based VMAQ-2 as the service's sole EA-6A unit. Two years later 'Q-2' started transition to EA-6B Prowlers, its re-equipment allowing the surplus EA-6As to move to three units in the Reserves and one specialist regular US Navy squadron, VAQ-33.

In 1987-89 the US Navy carried out a partial modernisation of the remaining EA-6As under what was described as the RECAP programme, the title being a subtle allusion to the way the EA-6B community named its upgrades. This involved inclusion of an ALQ-126 defensive suite as well as LORAN (Long-Range Navigation) equipment and improvements to the EW system. All three reserve squadrons and VAQ-33 received RECAPs.

As previously noted, the EA-6A was replaced by the Prowler in VMAQ-2 from 1977. It soldiered on in the Reserves and as an EW adversary platform through to 1993, when VAQ-33 retired the last of the series. The following eight squadrons flew the EA-6A from 1974 through 1993. None saw combat during that period;

VMCJ-1 – Forward deployed at Iwakuni, in Japan, under MAG-12 and 1st MAW, VMCJ-1 also operated Det 101 from the carrier *Midway*, providing EW support for CVW-5. 'CJ-1' lost one 'Electric Intruder' after the Vietnam War while operating off the carrier, BuNo 156980 (RM 611) suffering a mid-air collision with VA-56 A-7A BuNo 153204 NF 412 on the night of 22 October 1973, killing all three crew involved. The squadron was deactivated on 2 September 1975 as part of the Marines' re-organization of its VMCJ units. Later Prowler unit VMAQ-1, established in 1992 from VMAQ-2, has no lineal connection to VMCJ-1.

VMCJ-2 – Based at Cherry Point under 2nd MAW, the 'Playboys' were notable for having covered two successive carrier deployments (in *Forrestal* and *Saratoga*) to the Mediterranean in 1971 with a single EA-6A detachment. The squadron transferred its RF-4Bs to VMCJ-3 (which became VMFP-3) in 1975 and was re-designated VMAQ-2 on 2 September that same year.

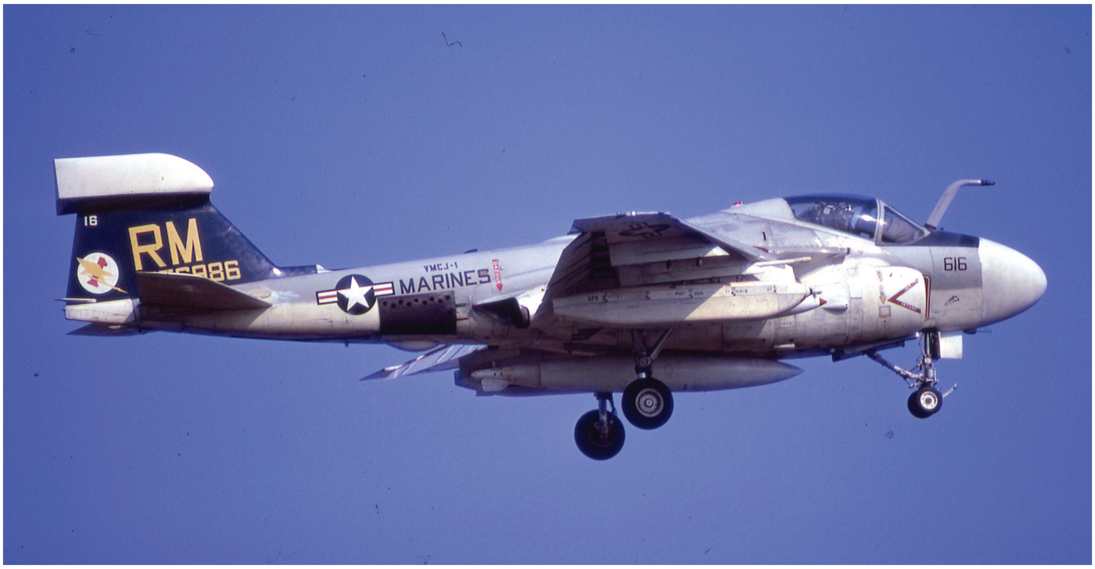
VMCJ-3 – Found at MCAS El Toro, in California, under 3rd MAW, VMCJ-3 transferred its remaining Intruders to VMCJ-2 and was re-designated VMFP-3 on 2 September 1975, becoming the Marines' only RF-4B squadron.

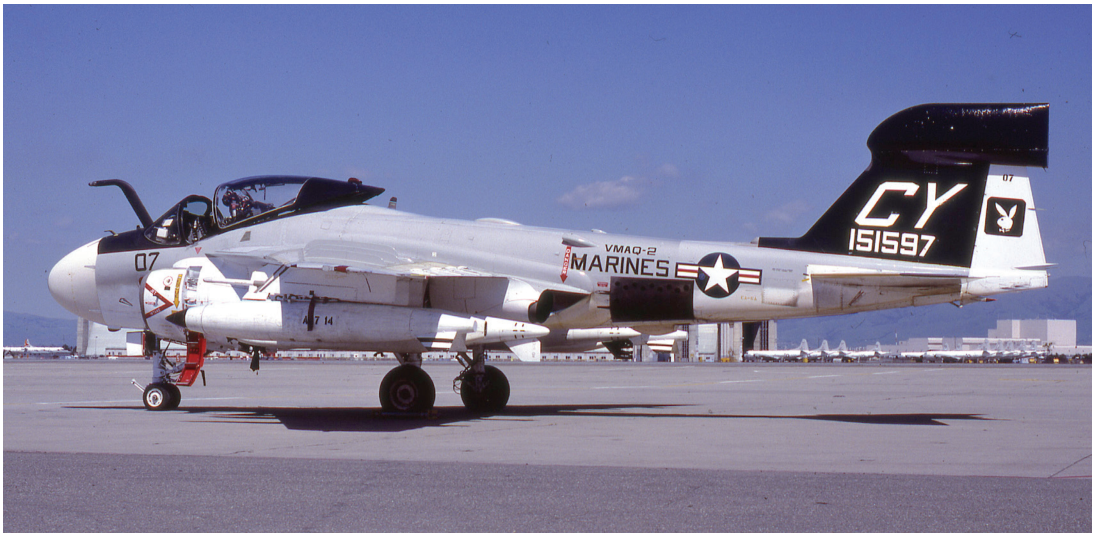
VMAQ-2 – On 2 September 1975 VMCJ-2 was re-designated Marine Tactical Electronic Warfare Squadron 2 (VMAQ-2), becoming, for a short period, the sole EA-6A operator in the world with up to 18 aircraft typically assigned. VMAQ-2 retained its predecessor's 'Playboy' nickname and traditions through to 1992, when it was ordered to drop the title as part of the post-Tailhook fallout. The squadron formed three permanent detachments (A, B and C), which rotated to Japan as part of UDP, as well as supporting CVW-5 on board the carrier *Midway*. Prowler transition started in 1977, with the dets becoming X, Y and Z. The last Intruder det returned home in September 1978.

VMAQ-4 – Established on 21 May 1981 as a Marine Reserve squadron under 4th MAW, the Whidbey-based 'Seahawks' flew Intruders through to

RIGHT
The most famous of all EA-6A markings belonged to the 'Playboys' of VMCJ-2/VMAQ-2, who flew the type until replacing it with the EA-6B Prowler in 1977-78. CY 07 BuNo 151597 sits at NAS Moffett Field, California in April 1979, the jet being laden down with four external tanks for its cross-country flight from Cherry Point (*Michael Grove*)

VMCJ-1 was 1st MAW's Composite Reconnaissance squadron, and it flew extensively in Vietnam with four different types of aircraft – RF-8A, RF-4B, EF-10B and EA-6A. Following the end of the war the unit settled down back at Iwakuni, with ten photo-Phantom IIs and six 'Electric' Intruders normally assigned. VMCJ-1 also provided a detachment of both types to CVW-5, embarked in *Midway*, once both the carrier and its air wing were based in Japan. This is EA-6A RM 616 BuNo 166986 on approach to NAF Atsugi on 27 March 1975. Nine months later the squadron would be deactivated as part of the Marines' reorganisation of its specialist reconnaissance and jamming units that resulted in the formation of VMAQ-2 and VMFP-3. In terms of squadron lineage, VMCJ-1 was a dead end, having no actual historical connection to later VMAQ-1 (which was formed out of a VMAQ-2 detachment) nor VMAQ-4, in spite of the latter unit's use of the 'RM' tailcode (*Toshiki Kudo*)





A number of EA-6As went through the RECAP improvement programme in the late 1980s. They can be identified by the 'beer can' antenna housing on the rear part of the tail 'football', as well as a small barbed antenna at the base of the refuelling probe. Here, VMAQ-4 RECAP BuNo 151597 folds its wings at Whidbey Island in May 1989. The aircraft is carrying four ALQ-76 pods and boasts very simple TPS markings. The blackened speed brake emphasises the point that they were functional on the EA-6A until the end, the EA not having the wing-tip boards of the A-6 bomber. VMAQ-4 would transition to EA-6Bs in 1990 and eventually be activated into the Regular Marines (*Author*)

1990, when it converted to EA-6Bs. VMAQ-4 gained permission from the Seattle National Football League team to use its Seahawk image as the unit insignia. In 1984 it became the first (and possibly only) EA-6A squadron to ever shoot an AGM-45 Shrike anti-radiation missile. VMAQ-4 transitioned to the EA-6B Prowler in 1990.

VAQ-33 – The 'Firebirds' of VAQ-33 provided realistic EW training for the fleet as part of the Fleet Electronic Warfare Support Group. The only Regular US Navy squadron to ever operate the EA-6A, VAQ-33 was actually more of a composite unit flying multiple types of aircraft, including (but not limited to) ERA-3Bs, EF-4B/Js, EA-4Fs and an NC-121K. The 'Firebirds' received their first EA-6As in 1979 and soon had five assigned. Initially based at Norfolk, the squadron moved to Key West, in Florida, in 1980, where it lived blissfully until disestablished on 1 October 1993, with eight Intruders assigned. One EA-6A (BuNo 156988) was lost on 11 February 1991 due to a total hydraulic failure, both crew ejecting

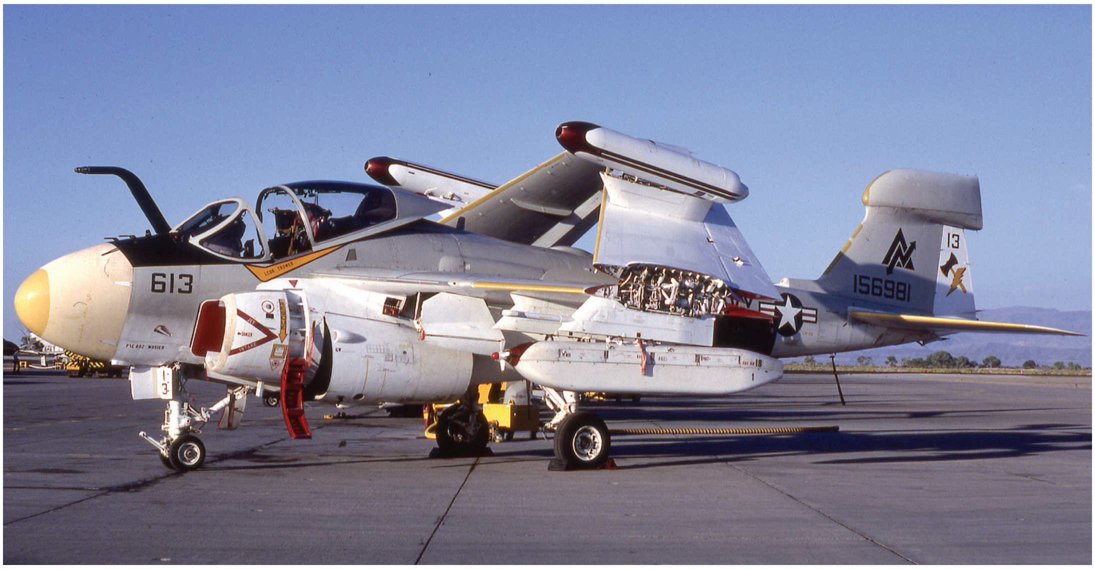
and being recovered – the EWO, Lt Linda Heid, was only the second female to eject from a US Navy jet. VAQ-33 EA-6As carried a wide array of jammers, chaff systems and threat simulators, including ALQ-76, ALQ-167, ALE-41, ALE-43, AST-4 and ALQ-170 pods.

VAQ-209 – Although the two US Navy Reserve Air Wings (CVWR-20 and -30) each had a VAQ squadron assigned from 1970, this was deceptive as both of the Alameda-based 'Whale' units (VAQ-208 and -308) actually flew solely in the tanker role with KA-3B Skywarriors, never operating the EKA-3B tanker/jamming version. In the late 1970s two new units were established to provide a real EW capability in the Reserves, with EA-6As coming from the Marines. The first, VAQ-209, was established on 1 October 1977 at Norfolk with five Intruders. It adopted the popular title 'Star Warriors' and gained the approval of movie producer/director George Lucas to use the image of Darth Vader on its logo. The squadron flew EA-6As for 13 years before converting to Prowlers in 1990 and moving to NAF Washington, D.C.

VAQ-309 – Known as the 'Axemen', VAQ-309 was established in December 1979 as the west coast counterpart to VAQ-209, operating EA-6As under CVWR-30. Its logo featured a whimsical 'Axeman Andy' holding a lightning bolt and, as described, 'VAQ-309's insignia depicts a fierce lumberjack who can strike with lightning quickness to chop down the enemies' veritable forest of radars'. During its Intruder period the unit conducted carrier qualifications on at least eight different carriers and deployed for exercises from Hawaii to Sicily. VAQ-309 converted to Prowlers in 1990.

Two EA-6As are known to be on display – BuNo 147865 (nicknamed *Methuselah*) at MCAS Cherry Point and BuNo 148616 at NAS Key West, marked up as a VAQ-33 jet. The Marine aircraft was originally painted in correct VMCJ-2 markings, which included the 'Playboy' insignia on the tail. The latter have since been covered over to protect the sensitivities of certain individuals.

The US Navy Reserves established a pair of squadrons in the late 1970s to fly EA-6As, with aircraft coming from the Marines. The 'Axemen' of VAQ-309 were based at Whidbey Island and flew the type until they were replaced by EA-6B Prowlers in 1990. ND 613 BuNo 156981 sits in fading light at NAS Fallon in September 1981 with ALQ-76 and ALE-41 pods loaded. The aircraft is marked for Lt Cdr J D 'Zip' Trower, a colourful 'weekend warrior' who assumed command of the unit in 1983 (*Michael Grove*)



CHAPTER FIVE

DESERT WAR 1990–91

VA-35 'Black Panther' A-6E TRAM AA 512 BuNo 161659 prepares for launch from *Saratoga*'s catapult two during *Desert Storm*. The aircraft appears to be armed with a load of Mk 83 1000-lb 'dumb' bombs (*US Navy*)

In 1990 the US Navy began to readjust its carrier force, decommissioning *Coral Sea* on 26 April. With seven deployments to Vietnam and action off Libya, the 'Coral Maru' retired with more combat time than both of its *Midway*-class sister-ships combined. With its numerical replacement, USS *Abraham Lincoln* (CVN-72), going to the Pacific Fleet, CVW-13 was also marked for extinction, although it would last through to 1 January 1991 before being disestablished. The 'War Horses' of VA-55 would go as well after less than eight years as an Intruder outfit, but not before the service had gone through a massive operational evolution that would put the largest number of carriers at sea since Vietnam in 1972.

On 2 August 1990 the nation of Iraq, under Saddam Hussein, invaded its small neighbour Kuwait, ostensibly to 'protect' native Iraqis living in the country. The world, and the US in particular, responded dramatically. The initial military action involved one flightdeck from each coast, with *Independence* (CVW-14/VA-196) arriving from WestPac, while the Sixth Fleet provided *Eisenhower* (CVW-7/VA-34), which passed through the Suez Canal to take station in the Red Sea. The 'Indy' eventually transited the Strait of Hormuz and entered the Persian Gulf, establishing the operational plan that would be used in the coming war. These plans took into account concerns about operating carriers within the gulf's restricted waters, including dire predictions of 'fish in a barrel' vulnerabilities for the big ship(s). However, as full-out war approached it became obvious that the US Navy would have to accept the risk in order to get its carriers close enough in the east to be relevant to the campaign.

Desert Storm involved the largest number of aircraft carriers in combat since Vietnam. This is Battle Force Zulu underway in the Persian Gulf after the end of the war. Flagship *Midway* is in the upper left, with *America* behind it. *Ranger* leads the second column, with *Theodore Roosevelt* astern. These ships had seven Intruder squadrons between them. *America* started the campaign in the Red Sea and transferred to the Gulf mid-war. Two *Ticonderoga*-class cruisers act as consorts (*US Navy*)

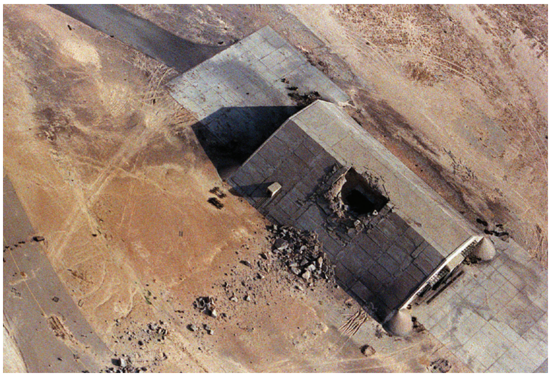
Back in CONUS and in Japan, six more carriers and their air wings were quickly prepared to head towards the region to participate in what was now called Operation *Desert Shield.* From the Atlantic Fleet came *Saratoga* (CVW-17/VA-35) and *John F Kennedy* (CVW-3/VA-75), *America* (CVW-1/VA-85) and *Theodore Roosevelt* (CVW-8/VA-36 and VA-65). The latter two departed CONUS prior to New Year's Day, with the goal of making a fast transit across the Atlantic and being on station by mid-January. The Pacific Fleet sent *Midway* (CVW-5/VA-115 and VA-185), which relieved *Independence* in the gulf in mid-December, while *Ranger* (CVW-2/VA-145 and VA-155) sortied out of San Diego on 8 December and soon became the second carrier in the gulf.

During the same period the US Marine Corps had 'set up shop' at an obscure base named Sheikh Isa, located at the southern end of Bahrain. The first Intruder unit, VMA(AW)-224, was directed to deploy to join the growing regional Marine presence under temporary MAG-70, which soon included Hornets, Prowlers and Harrier IIs. The US Marine Corps would continue to add units as the force grew through to the end of 1990.

The campaign to liberate Kuwait kicked off on the night of 15 January 1991 in what was now crowned as Operation *Desert Storm.* On the first night only four carriers were involved – *Saratoga* and *Kennedy* from the Red Sea and *Midway* and *Ranger* from the Persian Gulf. *America* had just reached station but was not included due to tanker constraints. CVW-1 would launch its first strikes on day two. 'TR', the only nuclear-powered carrier to be involved, was, meanwhile, moving rapidly around the Arabian Peninsula and would enter the gulf on the third day of the campaign.

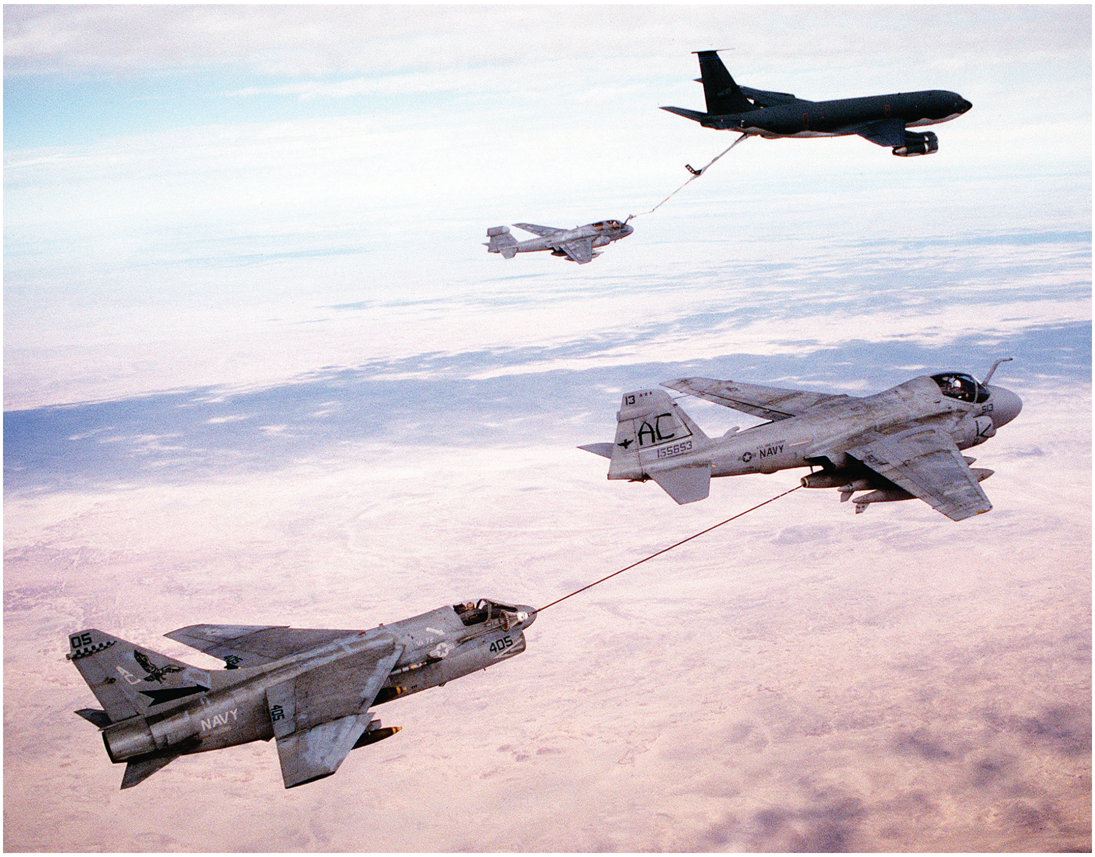
Compared to the 'drive-by' strikes that had marked the previous decade, *Desert Storm* promised continued operations on a level not seen since Vietnam. Other than the Flag officers and some captains, few of the aircrew involved were old enough to have experienced that level of sustained combat. The coming operation would prove a test for all of them, particularly since some intelligence estimates predicted moderate to heavy losses from 'combat-experienced' Iraqi forces. What ensued was almost two separate wars as far as the US Navy was concerned.

One of the most significant points driven home during *Desert Storm* was the ability of Precision Guided Munitions to destroy hard targets with a single weapon. The ability to place, as in this case, a single LGB on a target was demonstrated by sights like this one – a hardened aircraft shelter breached through the roof, with the resulting destruction of anything contained inside it. After the war it was found that the weapons' effects were amplified by cheap construction techniques used by contractors who built the facilities for Iraq. Along with Intruders, these attacks were carried out by USAF F-111s and F-117s and RAF Tornado GR 1/Buccaneer teams (*USAF*)



RED SEA

Battle Force Yankee/TF-155, under Rear Adm Riley Mixson, with his flag on CV-67, launched aircraft from *Kennedy* and *Saratoga* on the night of



The war from the Red Sea featured long distances and a lot of tanking. These are CVW-3 aircraft off of *Kennedy* taking fuel over Saudi Arabia on the way to targets in Iraq on 20 January 1991. A VAQ-130 EA-6B is plugged into a USAF KC-135E while a VA-72 A-7E works with a buddy store from a VA-75 A-6E. The Intruder would top-off from USAF 'big wing' tankers periodically and then act as a 'hose multiplier', which helped speed the process for the strike group (*US Navy, Cdr 'Lites' Leenhouts*)

17 January 1991. *America* would join in on day two. Crews flying from Red Sea carriers had to cover vast distances to reach their targets, so they quickly established a routine of sending two large strikes a day, with flights averaging five-and-a-half to six hours. This would lead to aircrew flying greater total hours but fewer actual sorties than their Persian Gulf counterparts.

On board *Saratoga* with CVW-17 was Cdr Jim Anderson's VA-35. The 'Black Panthers' were joined in the wing by a pair of F/A-18C squadrons (VFA-81 and -83), which lost an aircraft on the first night to a MiG-25. The 'Black Panthers' had been tasked with attacking an airfield in western Iraq that was still called by its old RAF title, H-3. Four A-6Es made up the strike force, with squadron XO Cdr Mike Menth having the division lead in dash-1. The second aircraft ('Ray Gun' 510 BuNo 161668) was crewed by Lt Bob Wetzel and his B/N, Lt Jeff Zaun. Wetzel was a New Jersey native who had earned his Naval Aviator wings in 1987. He had joined the 'Black Panthers' in late 1988 and immediately deployed with them for a Mediterranean cruise in the newly commissioned *Theodore Roosevelt*. The airfield strike would be his first combat mission;

'We were tasked to hit the fuel farm at H-3 with eight Mk 20 Rockeyes, with a 2300 hrs time on target. The wing provided fighter and jamming support and our plan was to go in very low and fast, with each section arriving from different directions. Our aircraft would follow a minute behind the XO from the southeast. By the Initial Point [IP], we were about ten miles from the target, and the XO was already stirring things up ahead of us as there was a lot of AAA coming up. They were on NVGs, we weren't, and he was able to avoid the worst of it. About six miles out we saw a SAM coming up from our right – I broke heavily into it, while dropping chaff and flares.'

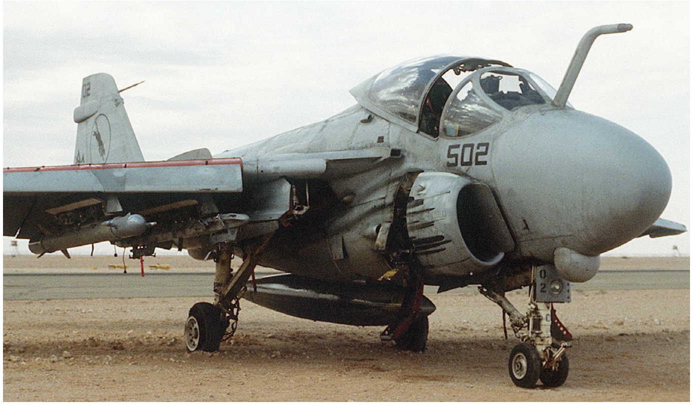
The approaching missile was a French-built Roland short-range SAM – something US forces had never faced before. The Roland came as something of a surprise to some. While Iraq's large force of Soviet-built SAMs was well understood, the French-German Roland system proved to be a tough customer. In the Falklands War, Argentine Rolands had counted for at least one British Harrier. Designed for short ranges and low altitudes, Roland was mounted on a tracked vehicle. Although intended for mobile army support, it appears as if the Iraqis dug them in at specific locations as fixed sites. The missile's radar did not set off American radar warning systems, and it ended up hitting four or five Allied aircraft during the war according to some sources. In the case of VA-35's attack on H-3, the unit unintentionally flew right through the heart of the envelope of at least one battery.

Wetzel and Zaun never saw the second missile, which was the one that hit them. 'The whole cockpit panel lit up with warning lights, and I vividly recall hearing the first engine grinding down as it quit. Then the other one went and I knew it was time to eject.' The crew each pulled their own handles with the aircraft at about 200 ft while doing at least 480 knots. Wetzel was knocked unconscious during the event. When he came to he was in the desert with serious injuries. Later evaluation would tell him he had suffered two broken arms, compression fracture of the vertebrae and a broken collarbone. His B/N, who had landed only about 100 ft away, was in better shape and able to render assistance to his pilot. They realised they were close enough to their target to see it, and attempted to start moving to the south, towards Jordan, but were picked up by Iraqi troops within 30 minutes.

'When we were captured we were surrounded by several Iraqi soldiers that were very intent on taking out their frustrations on us and bringing us harm, if not death,' Wetzel recalled. 'As tensions increased and these soldiers became an angry mob, Gen Layth Muneer, the H-3 base commander, arrived and I'm certain he saved our lives that night. He kept us safe through the night by keeping us in the base infirmary. The following morning he had his personal driver take us to Baghdad.'

Gen Muneer would later state that the head of base security demanded to take custody of the two Americans but he refused to let them out of his control. Muneer would later move to the US, and subsequently met with Wetzel and Zaun several times. They now consider him a good friend.

'Black Panther' Lts Bob Wetzel (left) and Jeff Zaun (right) are all smiles as they head for home after being released from Iraqi control on 4 March 1991. The crew had been shot down in western Iraq on the first night of the war. Wetzel is wearing a squadronmate's flightsuit, provided for this occasion (*US Navy*)



VA-35's 'Ray Gun 502' BuNo 158539 sits off the runway at Al Jouf, in Saudi Arabia, the morning after having been hit by an Iraqi Roland SAM while attacking H-3 airfield. The crew was able to get the aircraft down on the ground safely, in spite of heavy damage. It carries an ALQ-167 'Bullwinkle' self-defence jamming pod on station five. The airframe was subsequently broken down and returned to CONUS on board the destroyer tender USS *Yellowstone* (AD-41), where it was rebuilt as a SWIP jet by Grumman. It was eventually retired and placed in storage with AMARC at Davis-Monthan AFB in 1994 (*USAF*)

The second section of the flight had planned to approach the target from the southwest, but it too was lit up by Iraqi defences. While the lead aircraft made it through the hail of fire, the other Intruder ('Ray Gun 502' BuNo 158539) was also hit by a Roland just as they started dropping their six Mk 83 Snakeyes. The aircraft was crewed by Lt John Snevely and his B/N Lt Mark Eddy. 'We took a Roland aimed right at the nose while over the target at weapons commit,' Snevely explained. 'The missile impact interrupted the release pulse so we had bombs hung on both wings, which we got rid of on our egress from the area. The E-2 and E-3 controllers followed us into Saudi Arabia and got the field at Al Jouf to turn its lights on for us. We did a no-flap/no-slat no radio landing.'

Photographs would show the Intruder had sustained heavy damage, with numerous holes throughout the forward half of the fuselage, the wings and the canopy. The tough aircraft would later return to CONUS on board the destroyer tender USS *Yellowstone* (AD-41) and be rebuilt as a SWIP, before being retired and stored in Arizona in 1994.

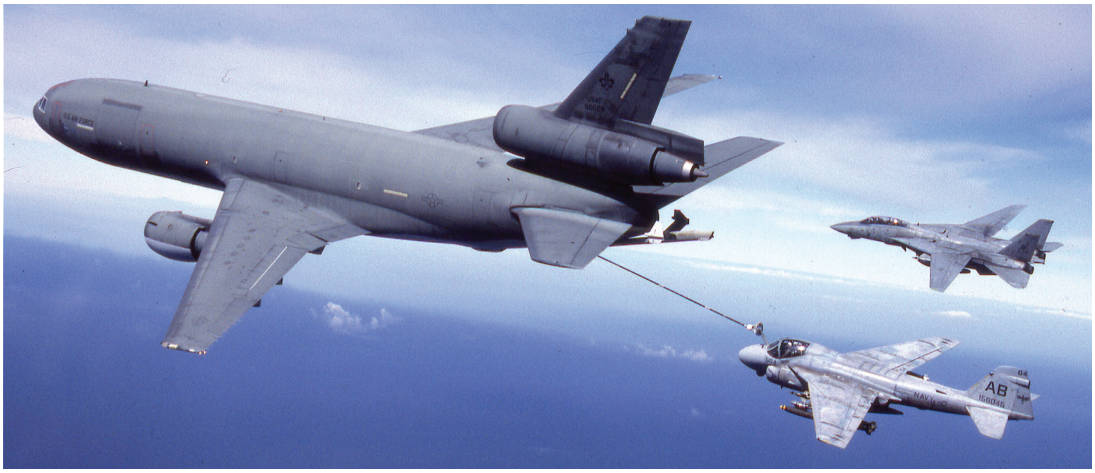
Wetzel and Zaun would remain under Iraqi control until released on 4 March. Although Wetzel would eventually regain flight status, it would take several operations and years of recuperation before he became a TA-4J instructor pilot with VT-7 at NAS Meridian, Mississippi. He would leave the US Navy in 1995 and currently flies for United Airlines.

VA-35 continued to fight its war from *Saratoga*, ranging throughout Iraq and helping wear down its army and industrial base. There was still some excitement to be had too. On the night of 21 January, for example, a division reported having a MiG-25 fly through its formation while they were leaving their target (Al Asad MiG base). This occurred immediately after one of their air wing F-14A+s (from VF-103) had been shot down while escorting a VAQ-132 EA-6B.

The 'Black Panthers' proudly returned home to Oceana on 28 March.

On *Kennedy*, the 'Sunday Punchers' were equipped with a number of SWIP A-6Es that greatly increased their weapons options. They also decided to start the war at medium to high altitudes and rely on their defence suppression aircraft to keep SAMs at bay. CVW-3 was also unique in that it had the last A-7E Corsair IIs in the US Navy, which would significantly reduce the amount of fuel required for air wing strikes as compared to those flown with Hornets.

Red shirts load Mk 82 500-lb bombs the old-fashioned way – manually, with the help of a 'hernia bar' attached to the nose. This is a VA-75 aircraft on board *Kennedy* on 1 February 1991 (*US Navy*)



VA-85 moved with *America* from the Red Sea to the Persian Gulf mid-war, after which it went right to work preparing the battlefield for the eventual Allied liberation of Kuwait. Here, 'Buckeye 504' BuNo 158046 takes on fuel from a 2nd BW KC-10A over the Persian Gulf on 19 February 1991 while a *Theodore Roosevelt*-based F-14A from VF-41 observes. AB 504 carries Mk 83s outboard and an LGB slung inboard (*Author*)

Among other duties, VA-75's SWIPs were initially used as 'HARM trucks', carrying four of the missiles, which would be delivered based on timing to cover other ingressing strikers. Another weapon used was the new AGM-84E Stand-off Land Attack Missile (SLAM). Developed to give the US Navy a reasonable long-range (roughly 60-mile) capability, SLAM was based on the Harpoon and featured an electro-optical terminal seeker. Controlled in flight via a data link pod usually carried by A-7s, SLAM proved to be something of a disappointment though, as stated by one weapons school instructor. 'SLAM was rapidly developed from parts of three different weapons – Harpoon, Walleye and Maverick. It was a pain in the butt to plan for, being both difficult and tedious. The missile itself had almost no ability to clear rising terrain, so you had to make sure there were no hills on its path of flight. Let's just say it wasn't very popular out there.' SLAM would eventually be replaced by the much better SLAM-ER (Expanded Response), which corrected all of its predecessor's issues, but this would be well after the Intruder had gone.

VA-75 would eventually deliver more than 800 tons of ordnance throughout Iraq prior to returning home on 28 March.

The third Red Sea carrier, *America*, launched its first strikes on the 19th. VA-85's skipper was Cdr Lew Crenshaw, one of the high-time A-6 NFOs. The 'Black Falcons' initially flew sorties much like the other two ships in their battle group, being long-range missions throughout the region. First targets, during daylight, were an oil production facility. That night they went after bridges that could be used to resupply Iraqi army troops. From 1 February the squadron started 'Scud Patrols', with two vehicles and their tactical ballistic missiles being claimed on the 3rd. On 8 February the ship began a transit to the Persian Gulf, where it would join TF-154.

PERSIAN GULF

Within the restricted waters of the Persian Gulf the Allied navies had more than 100 vessels, these being dominated by the US Navy's three aircraft carriers and two *Iowa*-class battleships. Flagship for TF-154 (Battle Force Zulu) was the veteran *Midway*, which, along with *Ranger*, was on station for night one of the war. *Theodore Roosevelt* would slip through the strait and enter the gulf on the third day and immediately start its war.

What made these carriers notable was the fact that all three had 'dual A-6' air wings embarked. *Midway* carried two small units (VA-115 and VA-185), as well as three F/A-18A squadrons, under CAG Capt Jim Burin, a highly respected A-6 B/N. On *Ranger* was the sole remaining 'All-Grumman' air wing, with the 'Swordsmen' (VA-145) and 'Silver Foxes' (VA-155) as the only attack assets. *Theodore Roosevelt* retained its unique Notional air wing, with pairs of F-14, A-6 and F/A-18A units. Medium Attack was represented in CAG-8 by the 'Tigers' of VA-65 and VA-36 'Roadrunners', all under CAG Capt Bill 'Fox' Fallon, an intense B/N and former MATWINGONE commander.

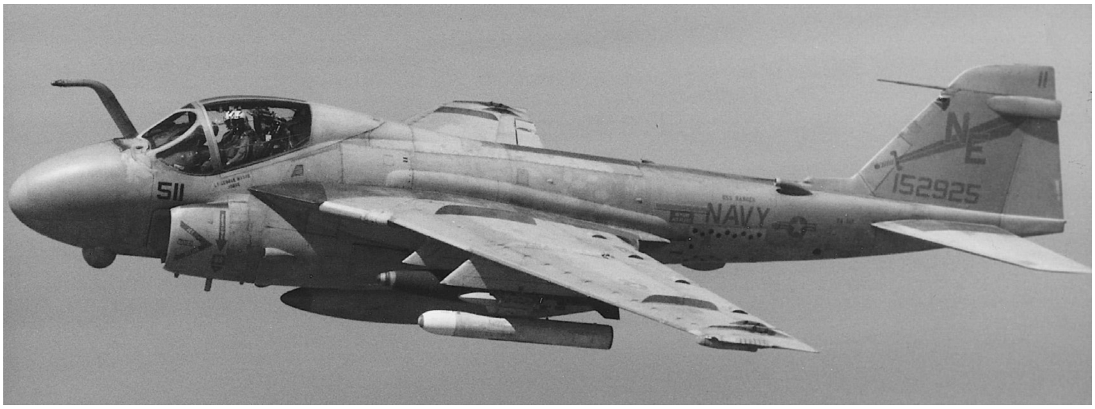
The senior carrier group commander in the gulf was a parochial light attack pilot who had been known to say that he had little use for A-6s or NFOs. The Admiral visited both *Ranger* and *Theodore Roosevelt* and managed to insult both Intruder-strong air wings when he bluntly stated that he would rather have more F/A-18 Hornets instead of A-6s. Even if delivered jokingly, the Medium Attack squadrons took that as a personal challenge as combat approached.

Compared to the Red Sea air wings, their Persian Gulf counterparts soon found themselves normally flying shorter sorties that were more concerned with preparation of the Kuwait battlefield than deep strike. Although the Red Sea carriers addressed possible force defence issues, events would prove that they were safe where they were, as opposed to the gulf carriers, which had to deal with a constant threat of sea mines as well as the possibility of Iraqi cruise missile attack.

The ships in the gulf had two issues in mind – one being to help reduce the strength of Iraqi field armies prior to the eventual invasion to liberate Kuwait and the other being force defence against enemy warships. While the Iraqi navy was limited in capability, it did have enough boats to cause some concern amongst Allied leadership. Therefore, Armed Surface Reconnaissance (ASR, previously called SUCAP) became a significant mission for the Intruders, as they were called upon to prowl the northern gulf and look for Iraqi naval units.

On board *Ranger* with VA-145 was Lt Cdr John 'J R' Haley. A Texas native and Naval Academy graduate, Haley was on his first tour as a Naval

VA-145 A-6E TRAM NE 511 BuNo 152925 is armed with a Mk 83 1000-lb bomb hung directly from the inboard parent rack and a LAU-10 launcher filled with five-inch Zuni rockets suspended from a TER on the outboard pylon. The latter weapon was hastily loaded onto Intruders involved in the anti-boat mission during the campaign following a series of rocket motor malfunctions with the preferred Skipper II anti-ship weapon. (*Peter Mersky Collection*)



Lt Cdrs 'J R' Haley and his B/N Bud Abbott stand by VA-145 A-6E SWIP NE 502 BuNo 162200 on the flightdeck of *Ranger* near war's end. The aircraft carries a load of Mk 82 Snakeyes and an AGM-88 HARM, as well as an impressive mission scoreboard (*Bud Abbott*)

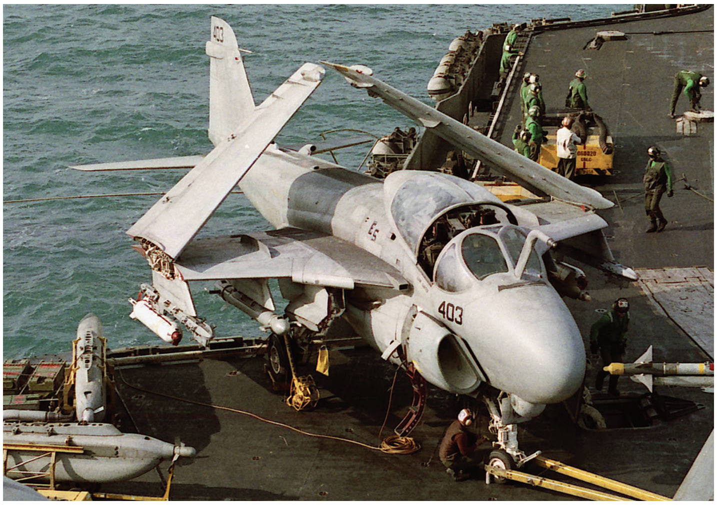
Aviator, having transitioned to being a pilot after a B/N tour with VA-52 and having helped establish the Medium Attack Weapons School at Whidbey. The 'Swordsmen's' CO was Cdr Denby Starling, a future vice admiral, who was another B/N-to-pilot transition. Starling had previously survived ejecting from an Intruder that had sustained a total hydraulic failure in November 1989. His squadron, like VA-75, had a mix of SWIPs and TRAMs and, with no A-7s or F/A-18s on board, they joined VAQ-131 in providing HARM coverage for CVW-2 as well.

'We really preferred to work at night and [with two large A-6 squadrons on board] were hauling a lot of ordnance – almost more than the ship could keep up with,' Haley recalled. 'My first mission was on the opening night at 0200 hrs, and it was really, really dark. I was crewed with Lt Bud Abbott, and we were one of two HARM shooters covering other Intruders being led by the skipper going in low to bomb the Umm Qasr naval base. Lt Cdr "Tugg" Thomson was in the other aircraft, and we had eight missiles to shoot, alternating between us on a strict timing pattern. I'd never shot a HARM before, let alone at night, and the first one "Tugg" shot really got my attention. Then mine came off and it lit up the night – it was a LOT brighter than a Shrike.'

In spite of facing a now fully aware Iraqi air defence system, CVW-2 sustained no losses on night one. This was probably due to VA-145 HARM support, as well as jamming and HARMs from VAQ-131 Prowlers. Haley and Abbott repeated the mission on night two. On their third flight (on 18 January) they were assigned to lay mines near the Umm Qasr naval base on the Shatt al-Arab river, downstream from Basra. They were configured with 12 Mk 82 Destructor mines – effectively 500-lb bombs fused to act as mines. Their aircraft had a fuel tank on the centreline and clean inboard stations.

'We were dash four in the division behind three "Jackals" [VA-155] jets,' Haley explained. 'Their skipper [Cdr Frank Sweigert] was leading, and we went in at 150-200 ft in lousy weather with fog. The plan was to do 450 knots to the IP and then whatever the jet would do at military thrust. They were throwing a lot of AAA at us but it was almost all behind or above us. The mines came off as planned. It was in the hard left turn off target that I saw a bright

VA-185's NF 402 BuNo 161234 recovers aboard *Midway* during *Desert Storm* following an Armed Surface Reconnaissance mission – only a single Mk 20 Rockeye is visible in this photograph. VA-115 Intruder NF 501 BuNo 161661 and F/A-18As from VFA-192 and VFA-195 are chained down to the flightdeck in the background (*Troy Prince*)



Photographs of *Midway* aircraft during *Desert Storm* are rare. VA-185's NF 403 BuNo 159575 is spotted aft of the island and is loaded with Mk 20 Rockeye and either a Skipper II or LGB on the port inboard station. It also carries an ALQ-167 'Bullwinkle' ECM pod on the starboard inboard pylon (*Troy Prince*)

flash to our left and ahead. We had to alter our egress route to avoid continued AAA. At some point Bud asked me if we could go faster, but the throttles were as far forward as they'd go.

'We went feet wet off Bubiyan Island and started to climb while Bud was calling on the front radio, although we got no response from anyone [the crew only discovered post-mission that the radio could receive but not transmit]. I finally tried the aft radio and Skipper Starling answered immediately. He was concerned about us by then and said the division had lost an aircraft. It wasn't until we were back aboard ship that we realised that the flash I'd seen was probably dash-3 – Lt William Costen and B/N Lt Charles Turner from VA-155 – hitting the ground, probably after being struck by AAA.'

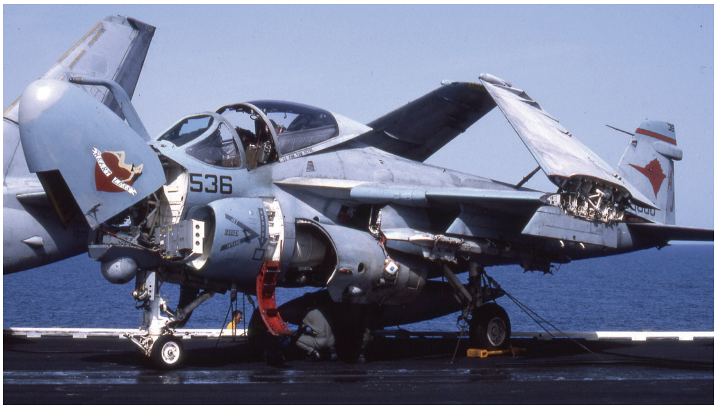
Even with the loss the war continued, with later missions including boat hunting and going after Iraqi army units in Kuwait.

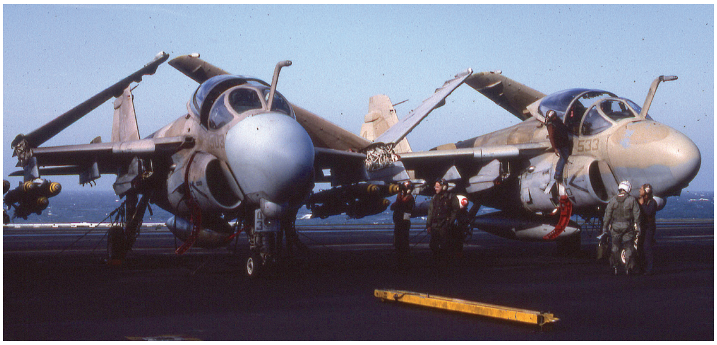
'One night the TRAM wasn't working but we had a full moon and could actually see things on the ground,' Haley remembered. 'We found an artillery battery firing to the south and dropped Rockeye and then Mk 82s with VT [airburst] fusing on them, getting high-order secondaries for that one. Once back on the ship we found out from our E-2 unit [VAW-116 "Sun Kings"] that a flight of USAF F-15s had tried to shoot us but that they'd been called off.'

Haley had flown 41 combat missions by war's end, all bar two of them at night. He would later command Prowler squadron VAQ-136 and two aircraft carriers before eventually retiring as a Rear Admiral, having served as Commander, Naval Air Forces Atlantic in 2015-16.

Midway's two Intruder squadrons had seven 'bombers' and a pair of KA-6Ds each. Their first strikes went at 0200 hrs. B/N Lt Cdr Joe Kuzmik, another future Flag Officer, had taken part in *El Dorado Canyon* with the 'Blue Blasters'. By 1991 he was serving with VA-115, flying in dash two behind CAG Capt Jim Burin as they struck Ahmed Al Jaber air base in Kuwait. They were carrying six Mk 83 1000-lb bombs on their outboard stations and an ALQ-167 'Bullwinkle' pod on one of the inboards. The latter pod saw widespread service amongst A-6 and F-14 units throughout *Desert Storm*, the device being specifically used to

One of two Intruder squadrons in CVW-8, VA-36 added nose art to AJ 536 BuNo 155600 near the end of the war, featuring the unit's 'Heartless' radio callsign. The aircraft would be the 'Roadrunners'' entry into the air wing's post-war artwork contest, which was actually won by E-2-equipped VAW-124. The jet is shown here after the cessation of hostilities, on 7 April, although it still has flak screens mounted in the cockpit. The unit was ordered to remove the artwork prior to returning home in late June 1991 (*Author*)





Both of CVW-8's desert camouflaged Intruders are shown here spotted on 'TR's' flightdeck on 5 February 1991. VA-65's AJ 503 BuNo 155620, on the left, holds 'MER-fulls' of Mk 82 Snakeyes that were probably intended for the Iraqi army. VA-36's AJ 533 BuNo 161667, on the right, carries a light load of Rockeye canisters, indicating an Armed Surface Reconnaissance (anti-boat) mission. AJ 503's radome had to be replaced at some point, and stayed grey until the brown paint was removed on both jets just days after this photograph was taken (*Author*)

confuse the SA-6 SAM. Kuzmik would later relate that the Iraqis put a lot more AAA in the sky than the Libyans, although it was not any better aimed, at least that night.

CVW-5's other primary target on the first night was Shaibah airfield, near Basra, which was struck by four Intruders. VA-185 CO Cdr Bernie Satterwhite had the lead, while VA-115's Cdr Terry Toms, who had been with the 'Green Lizards' over Cambodia in 1975, led the second section. They went in at 350 ft and started descending as the intensity of the AAA increased. Toms would later recall that 'the Vietnam guys used to tell us that you wanted to fly towards the dark spots on the ground, indicating no ground fire. We noticed that night that there didn't seem to be any dark spots.'

The performance of Burin's CVW-5 would end up being the least reported during the war, probably due to press restrictions directed by the Flag embarked in CV-41.

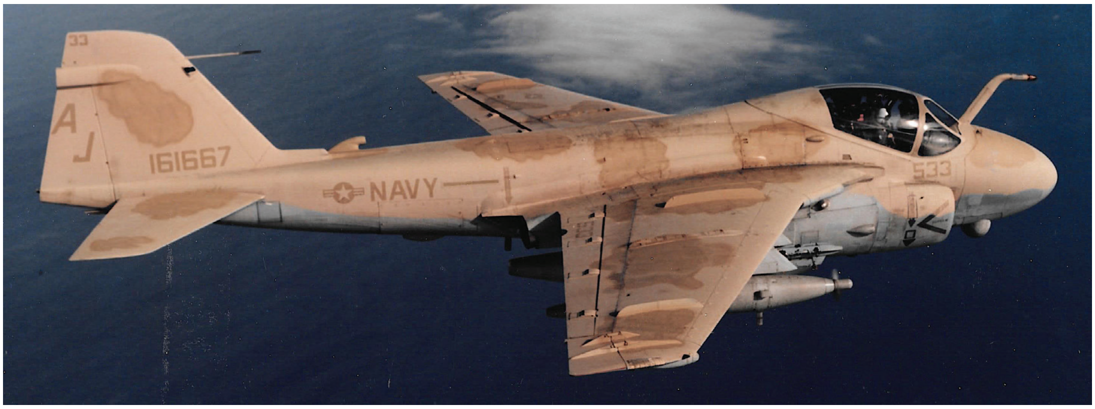
The amount of AAA being fired by the Iraqis was impressive by anyone's standards. It ranged from small stuff, 7.62 mm from army infantrymen, all the way up to radar-directed 100 mm. The ZSU-23-4 Shilka system (mounted on a tracked vehicle), with its four radar-directed barrels, was considered to be particularly nasty. Word soon spread among some ready rooms, however, that much of the AAA was not dangerous because the Iraqis were supposedly just firing in the air under orders at nothing in particular. 'They were just burning their barrels out,' said one participant. 'There was a guy guarding the bridge to Bubiyan Island who appeared to be manning a single ZSU-23-4. We saw him firing on at least two nights, just spinning around like a pinwheel. We weren't anywhere near him and figured he wasn't hurting anyone. Then somebody reportedly dropped an LGB on him and we never saw him again.'

The third carrier in the Gulf, *Theodore Roosevelt*, had 18 A-6E TRAMs assigned, split between CVW-8's two squadrons. Cdr Herb Coon's VA-65 had made its previous cruise in *Coral Sea* alongside VA-55 and had moved to CVW-8 to join its Notional air wing. Cdr Ladd Webb's outfit, VA-36 "Roadrunners", was on its second deployment since establishment, and both jumped right into the thick of it.

One of the things CVW-8 had done prior to arriving in-theatre was to have one Intruder from each squadron painted in water-soluble desert brown camouflage. The thought was that brown colours would be useful for low-altitude missions during daylight. Although they worked as intended, CVW-8 actually started the war flying at medium altitudes, where normal TPS provided better concealment. Both aircraft would fly combat in desert brown camouflage through to the second week of February, when they were washed to remove the experimental scheme.

According to 'Tiger' Lt Cdr Don Quinn, VA-65's brown aircraft, AJ 503 BuNo 155620, actually gained a reputation for being something of a 'problem child' during the war, the jet suffering from a number of

RIGHT
VA-65's AJ 503 BuNo 155620 (the unit's 'brown jet') took a hit from AA fire while finishing an attack against an Iraqi boat off Falafal Island in early February 1991. The result was this nasty hole in the starboard wing. The B/N, future Rear Adm Don Quinn, and his pilot, Lt Jeff Martin, lost one hydraulic system, although they were able to land the damaged aircraft at Shaikh Isa, where the Marines replaced the wing (*US Marine Corps*)

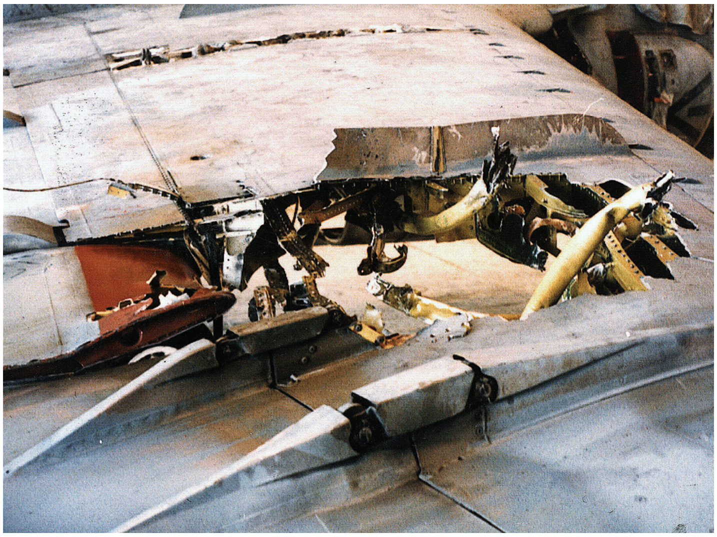


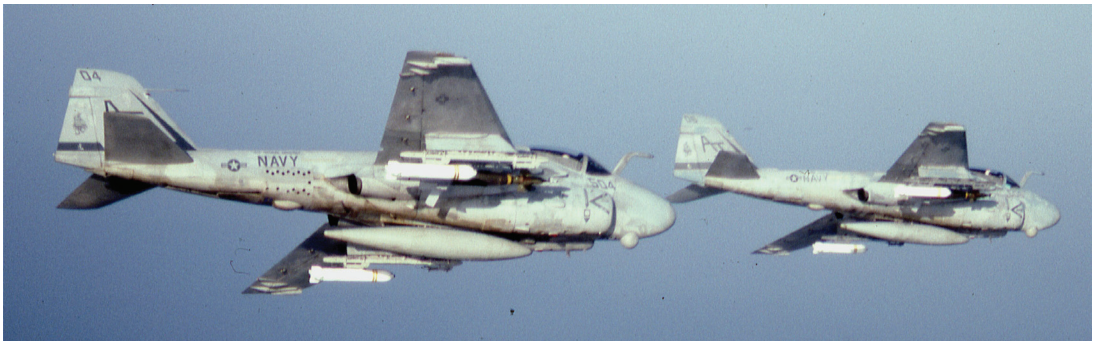
An in-flight view of AJ 533 BuNo 161667 in its distinctive experimental water-soluble desert camouflage scheme. Both it and VA-65's similarly painted Intruder had been camouflaged in anticipation of low-altitude flight. The desert colours lasted until the paint was removed in early February 1991, it being determined that the brown scheme was irrelevant at the medium altitudes that were actually being flown in the war. AJ 533 carries a rarely seen AUTOCAT pod on the near station. Also carried by S-3s, the store allowed aircraft to function as UHF radio relay stations, improving long-range battle group communications. (*US Navy*)

persistent mechanical issues. During the first week of February he was flying AJ 503 on a day mission hunting boats near Falafal Island when there was a loud 'BOOM!' and the aircraft shook. He looked out to see a large hole in the starboard wing near the speed-brake. The jet had been hit by AAA, but it kept flying. Quinn ended up landing at the MAG-11 base at Sheikh Isa, accompanied by a live Mk 82 on one MER that would not jettison. It took a week, but the Marines were able to replace the wing and allow AJ 503 to eventually fly back to the 'TR'.

The ASR boat hunting missions flown by the gulf-based A-6 units took up a lot of time and energy. Each air wing took turns orbiting over the northern gulf looking for anything that moved, which was then attacked once sighted. Targets included everything from 1200-ton landing ships to minesweepers, as well as a variety of speedboats. The biggest concern was a small number of *Osa II*-class boats that could have, theoretically, attacked coalition shipping with 'Styx' missiles. Preferred ordnance for ASR mission included the Skipper II, 500-lb LGBs and Rockeye. When CVW-8 started having launch failures with its Skippers (apparently due to propellant issues), the A-6 units reverted to an old favourite – the five-inch Zuni unguided rocket. Harpoon was specifically not allowed due to its inability to discern friend from foe in a 'small pond' full of allied shipping.

The counter-shipping offensive reached its height on 29 January when Iraq started sending its surviving naval units to Iran. The US Navy's reaction was 'The Battle of Bubiyan' (or the 'Bubiyan Blowout' as it was nicknamed by those involved), which led to the destruction of a number of vessels. The fight started on the night of the 29th when the XO of VA-145, Cdr Rich Cassara, and his pilot, Lt Cdr Rick Noble, observed five





A section of 'Fighting Tiger' A-6E TRAMS return to *Theodore Roosevelt* after an unfruitful boat hunt on 20 January 1991. Their light load allowed recovery without requiring jettison due to weight restrictions. They both carry single Mk 20 Rockeyes under each wing and a single AGM-123 Skipper II under their starboard wings (*Author*)

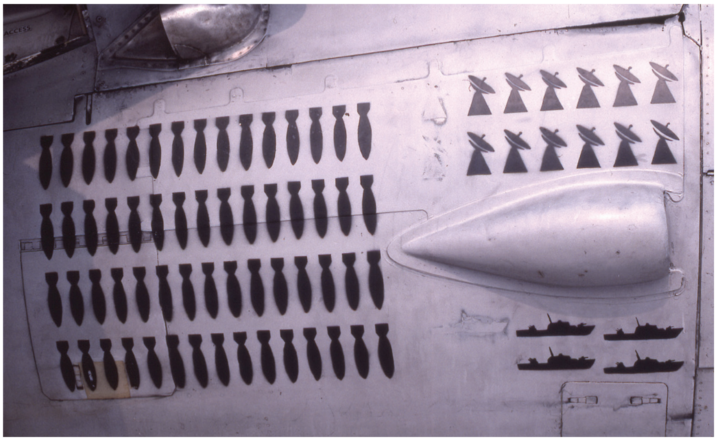
boats moving off the Al Faw Peninsula heading east. They attacked with a VA-155 wingman, sinking three of them with LGBs or Skippers. A Canadian Forces CF-188 Hornet strafed a fourth, but the boat still made it to Iran in a perforated condition. For the next 13 hours coalition forces continued attacking what was now a stream of shipping running east. Among the participants was VA-115's Joe Kuzmik, who put an LGB into an *Osa* and watched with satisfaction when the boat's missiles went off high-order in sympathy. When it was all over at least 20 ships had been destroyed, the effect being to render the Iraqi navy combat ineffective.

One Intruder would be lost while prosecuting boats in the northern gulf, however, when, on 2 February, Lt Cdr Barry Cooke and Lt Pat Conner from VA-36 were apparently shot down in 'Heartless 531' BuNo 155632 while engaging an Iraqi vessel by themselves. Both men were killed.

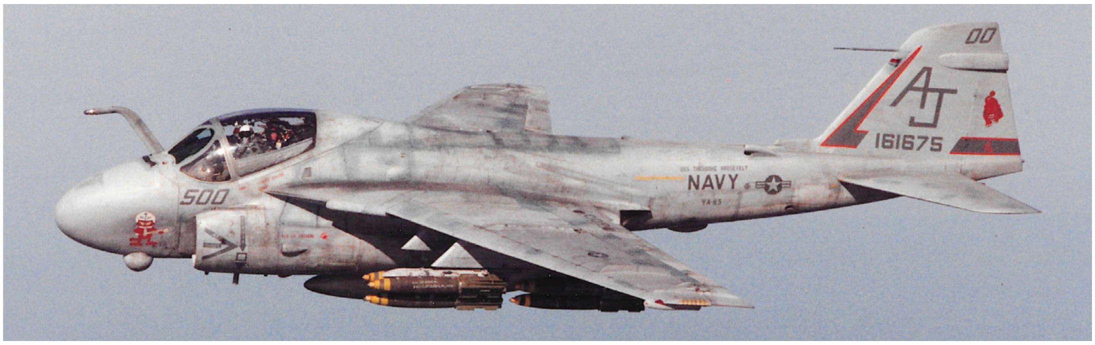
America arrived in the gulf on 14 February as the mission of battlefield preparation became paramount, coalition aircraft pounding the Iraqi army ahead of the path that the coming assault would take. VA-85 and CVW-1 quickly adapted to the completely different operational tempo of the gulf. The ship's arrival allowed *Midway* to move well south and apply non-skid to its flightdeck, which had worn down to unsafe levels. On 15 February the 'Black Falcons' had AB 512 BuNo 155602 lose its brakes and roll over the flightdeck angle before hanging up by its main mounts, the jet's crew ejecting successfully. With other aircraft anxious to recover, the deck crew removed its ALQ-167 pod before pushing the otherwise serviceable jet into the gulf 'as an act of salvage'.

On 23 February, Intruders, including jets from VA-85 and VA-145, attacked 'Silkworm' cruise missile sites that had launched weapons against the battleship USS *Missouri* (BB-63). When all was said and done, VA-85 would fly more than 600 sorties and drop in excess of 850 tons of ordnance during the war.

The tempo of continuous combat operations also led to other inevitable mishaps. One of the more spectacular was on 'TR' on the night of 20 February when, as a VA-36



VA-145 A-6E SWIP NE 500 BuNo 162182 shows 60 missions flown in total, with four boats destroyed and 12 successful HARM launches (*Bruce Trombecky*)



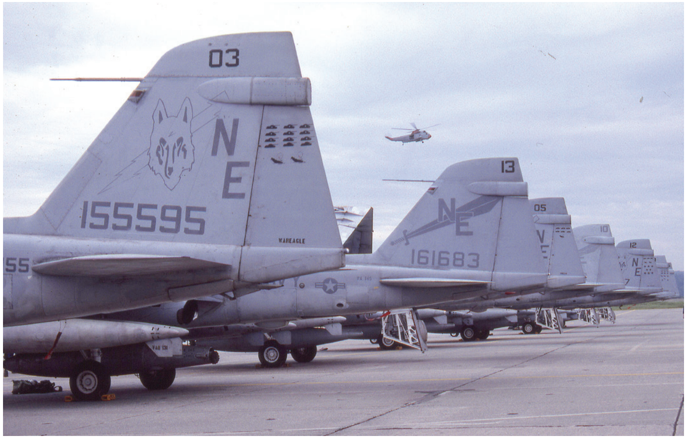
VA-65's CAG jet, BuNo 161675, was selected to wear the nose art as the unit's entry in CVW-8's impromptu artwork competition. The end result was a 'bone dome'-wearing Garfield wielding *THE Big Stick!* on the port side of the aircraft's radome. Armed with a heavy load of Mk 82 Snakeyes, and fitted with flak screens in the cockpit, 'AJ 500' was photographed 'on the wing' during the final stages of the campaign (*Peter Mersky Collection*)

aircraft was taking tension for launch from a waist catapult, a 'green shirt' (part of the catapult crew), who had been checking the nose tow launch bar, stood up in front of the port intake. He was immediately sucked off his feet and into the motor. The sailor, ABE2 John Bridges, lost his cranial helmet and float coat, which damaged ('Fodded') the J52, causing a shower of sparks out of the exhaust and suspension of the launch. Bridges, initially wedged in the intake, was able to crawl back out, whereupon it was discovered what had happened. Although he had suffered injuries, he would later return to duty. The video of his harrowing incident has since become widely seen on the internet, frequently with incorrect descriptions of the event.

The ground war started on 24 February, and Intruder units continued working over the Iraqi army while also conducting interdiction missions further north. Large stretches of road became graveyards for fleeing Iraqi army units in what became known as 'Highways of Death', as every allied aircraft in-theatre seemed to add its weight to the carnage. Thanks to the Intruder's Moving Target Indicator capability and dedicated B/N, who could interpret the system and guide LGBs, the enemy had no refuge in the dark. Forward Air Controllers (FACs) also seemed to appreciate what the A-6 had to offer, the aircraft's large payload and fuel reserves making the jet ideally suited to remaining on station for extended periods of time as they hunted along the roads leading back to Iraq. As one B/N subsequently stated post-war, 'We'd be working our third or fourth target while the Hornets went looking for a tanker after just one.'

With Kuwait liberated, peace was declared on 28 February. Nine of the US Navy's 15 fleet Intruder units had been involved and a whole new generation of naval aircrew had gained the experience of sustained combat in the largest US campaign since Vietnam. The cost to the Intruder community was four A-6s destroyed and four aircrew killed.

What no one could foresee, however, was that this accomplishment would rapidly lead to the decline and eventual end of the Medium Attack community.



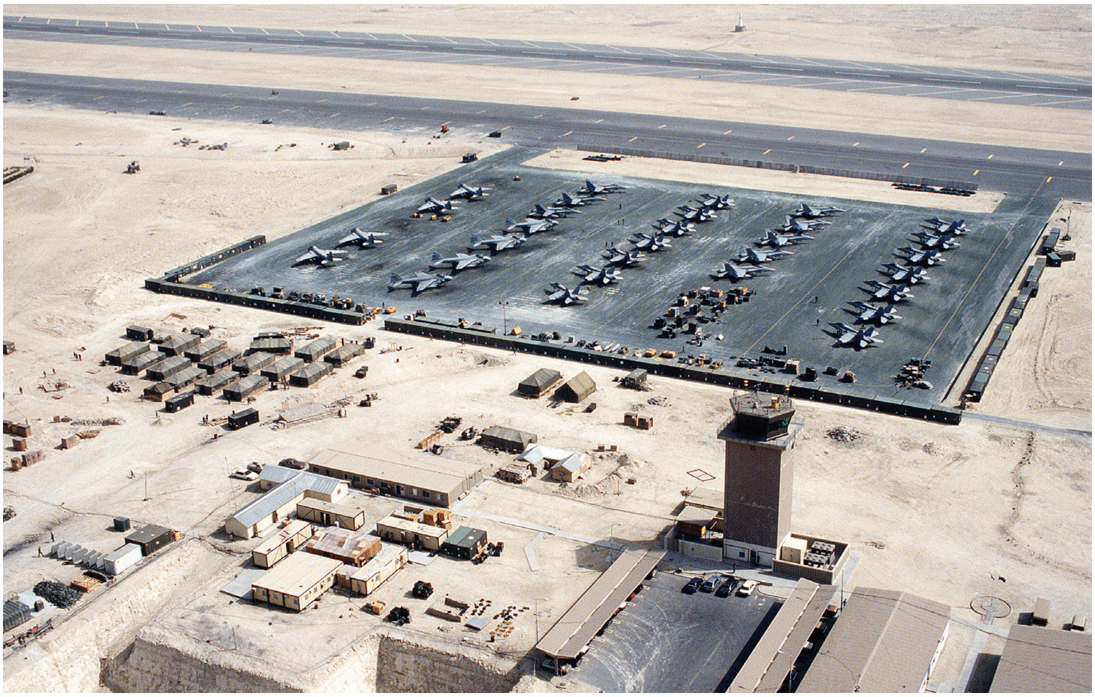
Homecoming at Whidbey Island for CVW-2's Intruders on 6 June 1991. While VA-145 applied kill markings behind the starboard intake of its aircraft, sister-squadron VA-155 used the rudder. NE 403 BuNo 155595, christened *WAREAGLE*, was credited with the destruction of 12 tanks and two boats (*Author*)

THE MARINES' WAR

Many Marine flyers seem to have the same basic story about finding their *Desert Storm* base. They were told to fly to the southern end of the peninsula that makes up Bahrain and look for an airfield where the charts said one did not exist. What they found was Shaikh Isa, a new, modern facility that had been built for the country's recently acquired F-16 force, while also having additional ramp space provided 'just in case' the US ever needed it.

US Marine Corps aircraft arrived rapidly during the *Desert Shield* build-up, with 3rd MAW under Maj Gen Royal Moore taking charge. By the time the war commenced the airfield was not only home to Bahraini F-16s, but also USAF F-4Gs and RF-4Cs and a large part of 3rd MAW's fixed wing strength. Originally designated MAG-70, the group controlling the fixed-wing assets was soon renamed MAG-11. It would control one KC-130, one EA-6B, six F/A-18 and two A-6E squadrons during the conflict. The two Intruder squadrons involved were the 'Hawks' of VMA(AW)-533 (led by Lt Col Beman Cummings), which arrived on 24 August, and the 'Bengals' of VMA(AW)-224 (under Lt Col Bill Horne, who had flown F-4s in Vietnam), which reached Bahrain on 20 December. Both were from Cherry Point, and they each brought ten A-6E TRAMs with them for the effort.

Facilities at Sheikh Isa were described as 'typical Marine' – spartan, with tents and the bare minimums. This caused some issues when the neighbouring 35th TFW of the USAF built accommodations to its standards. As described by one Marine NFO, 'They had more people, space and amenities for three F-4 squadrons than we had for all ten of ours.' Inter-service envy notwithstanding, the Marines prepared for war, and went right to it on the night of 15 January.



MAG-11, which included two A-6E squadrons, was based at Sheikh Isa, in southern Bahrain, throughout the war. This aerial photograph shows roughly half of the Marine ramp, with Intruders and Hornets visible. Complete aerial supremacy allowed the tightly packed parking shown here (*US Marine Corps*)

A Marine A-6E crew prepares to launch from Sheikh Isa during *Desert Storm*. In standard A-6 practice, the B/N has the normal assortment of approach plates and his NATOPS pocket checklist stuffed in the quarter panel ahead of him (*US Marine Corps*)

Amongst the many aircraft the Marines had brought to war, the two Intruder squadrons had the best range and night capability, as well as being the only ones that could self-designate laser targets. They were therefore coveted by the Central Command targeting cell, which was largely a USAF operation. Although normally committed by doctrine to supporting Marine infantry, that was not going to be an issue before the ground war started. The first missions would allow Marine A-6Es to go deep into enemy-held territory, with Marine EA-6Bs and F/A-18s in support. Initial targets were in Kuwait against Iraqi army units, as well as points deeper into Iraq. The goal was to get two combat sorties from each jet on a daily basis. Another primary target was the dropping of bridges that could be used to resupply forward units.

Favoured ordnance on the first night included Mk 84 LGBs or combinations of Mk 82s and Mk 20 Rockeyes. Once strikes began on troops in the field, another popular load would be 12 Mk 20s and a pair of 500-lb LGBs. Shrikes and Mk 77 fire (napalm) bombs were also used, and the MAG-11 jets also frequently carried ALQ-167 'Bullwinkle' pods like their US Navy counterparts. The AGM-45 Shrike would see limited use during the war in both US Navy and US Marine Corps units due to its obsolescence and the availability of HARM-shooters (F/A-18s in the Marines' case, as their Prowlers, though capable, were considered more important as jammers).

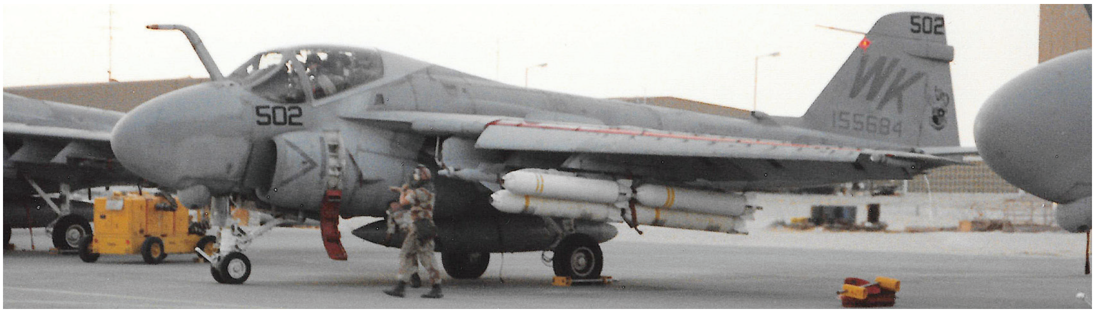
The Mk 77 napalm bombs were unique to the Marines, and delivered by both Intruders and Harrier IIs. The Intruder could carry up to eight, and they required a 700-ft delivery altitude, making the aircraft vulnerable to ground fire.

One of the VMA(AW)-224 pilots involved in the early strikes was Capt Tom Uryga, a graduate of Eastern Washington University who joined the 'Bengals' in the early spring of 1990;

'In the first part of the Gulf War we started out with deep strikes on Basra, Shaibah and Tallil. We'd use a mix [of ordnance], since the weather was shitty; 2000-lb LGBs and 2000-lb "steel nose cone". We'd try to pickle the LGBs right in the middle of the basket. The first night of the war we came back with better BDA [Bomb Damage Assessment] than the F-117s had.

'My first mission was with a guy named Rob McCarthy, an RAF Exchange officer and Tornado navigator. He had absolutely no fear of death – he had flown in the airshow demo team for the Tornado where they do the 100-ft inverted near-supersonic pass. Nothing scared Rob.

'First night we flew, we're heading into Iraq, and we're heading into Shaibah airfield. This was the first time we had actually flown with the [navigation and formation] lights out and relied on the green formation



VMA(AW)-224 'Bengals' A-6E WK 502 BuNo 155684 prepares to taxi from the Sheikh Isa ramp during the war. Its load for this mission is Rockeyes and an LGB (*US Marine Corps*)

lights instead – the lights on every jet were different. Some lights had burned out, which meant you couldn't tell what was what. You thought you were rendezvousing on Battlestar Galactica because of all the different lights.

'Off to the left side, as we're crossing the Gulf, you could see the SAM launches and AAA in Kuwait City – huge, holy shit, look at this stuff. Rob's got his head in the boot, doing updates. We're getting up there over the salt marshes, and little stuff – red tracers – was arcing below us, with bigger stuff, white tracers, reaching up higher to about 20,000 ft. Then you had some big AAA, big white bursts up at our altitude, but it was less frequent. I think the red stuff was ZSUs – it was disturbing enough, but you knew they weren't all radar-guided because you didn't have a lot of radar warning about everything.

'About this time Rob pulled his head out and said, in typical British fashion, "I say, Tom, it appears those blokes are shooting at us." "No shit, Rob. Put your head back in the boot."'

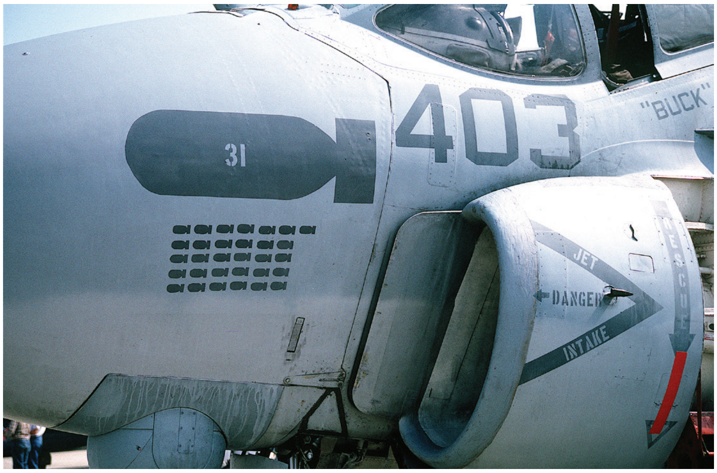
After weeks of deep strike and similar missions, on 20 February Marine units switched to Battlefield Air Interdiction (BAI) as their primary role in preparation for the ground assault. Central to this mission was the use of 'Kill Boxes', which were grids set up via latitude and longitude where FACs, familiar with their assigned territory, would call in aircraft to strike Iraqi army units as they were located. The procedure became deadly effective and would help lead to the mass capitulation of enemy forces as they realised there was no escape from Allied air power.

Capt Uryga flew a number of BAI missions during the final days of *Desert Storm*;

'The Air Force called the Kill Box missions CAS – what we Marines called CAS the Air Force called crazy!

'The B-52s [heavily involved in Kill Box operations] flew ten-hour missions from Diego Garcia. None had the external racks they used in Vietnam. They carried only 56 500-lb bombs. Two A-6s did more damage than a B-52. They just salvoed the the entire load in one pass. Their BDA pictures showed mile-long strips of closely spaced craters, usually laterally displaced from their targets [largely due to 100-knot high-altitude winds]. Carpet-bombing made a lot of noise but didn't hit much.

'The typical Hornet load was four or six Mk 82s or Rockeyes. Without tankers, they had about ten minutes of time-on-station [TOS] in Kuwait. They made one pass, dropped two bombs and then went feet wet to a tanker, gassed up, came in and dropped the rest, before going home and getting credit for two combat missions on one flight. Pretty cheesy way



VMA(AW)-533's hardworking groundcrew added bomb tally markings after missions as time allowed. The large bomb with the aggregate number '31' was applied just prior to the unit's return to CONUS (*US National Archives*)

to earn air medals. No [Marine] A-6 ever saw a tanker, yet we had more than 40 minutes TOS, even in northern Kuwait.'

The Intruder's outstanding endurance made it a firm favourite amongst the Marines fighting the war on the ground. One FAC attached to the infantry was an EA-6B NFO, who stated post-war;

'Our first three choices for CAS aircraft were, No 1, the Intruder, No 2, the Intruder, and No 3, the Intruder. It had plenty of bombs and enough gas to stick around. The Hornets had less of each, and as for the Harriers, if we didn't have a target ready for them when they checked in they almost always went right back to the tanker.'

Amongst the final missions flown by Marine A-6s on 26 February were the strikes on the road north of Kuwait City that led to Basra, which was one of the 'Highways of Death' clogged with Iraqi forces trying to flee from approaching coalition mechanised troops. One of the pilots that flew multiple strikes on the jammed road was Capt Uryga;

'Went into the clouds at 7000-8000 ft, came out at around 2000 ft and dropped Rockeye down to the 1200-ft level. Our load was normally 22 Rockeyes – -553 flew a few times with 28 by taking off the centreline [tank] but the jet then had no TOS. We'd go up, drop, hot fuel, hot rearm, then go back. I did three missions that night until they finally kicked me out of the aeroplane. We flew exclusively at night – we *owned* the night.

'We went through in 30-minute cycles with -533 – every 30 minutes there were four more Marine A-6s in the airspace over Kuwait. We just started laying down over the highway, pickling four or six [Rockeyes] at a time, coming back for another run, then coming back for yet another run. We dropped everything in the inventory except nukes and chemicals. We supposedly exhausted something like 40 or 60 per cent of the entire US stock of Rockeyes. I dropped 2000-lb bombs that were stencilled "Philadelphia Naval Arsenal 1957". They were not thermally coated, but they all worked.'

Two days later the war was over. The two Marine All Weather Attack units would not lose an aircraft in *Desert Storm*, and deliver more than a million pounds of ordnance during the campaign. Not ignored, however, was the fact that they had been joined on the eve of war by VMFA(AW)-121, the former Intruder unit now flying F/A-18Ds as 'Fast FACs'. Their presence signalled where the entire Marine A-6 community was soon headed.

The Marine Intruder units would carry out their roles to perfection and not lose an aircraft or man. VMA(AW)-224 would post 422 total combat sorties and expend 2.3 million pounds of ordnance during the campaign. Unlike their US Navy counterparts at that point, however, their efforts were coloured by the knowledge that the Intruder's remaining time was limited in the Corps.

CHAPTER SIX

YOU'RE TERMINATED

The US Navy's Medium Attack community was riding high after *Desert Storm*, having successfully participated in the most extensive combat operations conducted by US forces since Vietnam. What they did not know was that they were only a few years from extinction as a distinct part of Naval Aviation – although it was not for a lack of trying to find a successor to the A-6E. Even with the inability of the A-6F or G to gain production, there remained the promise of a new platform that was supposed to be coming in the form of the ATA. Being highly classified, speculation was officially discouraged, yet that only encouraged a serious whisper campaign in ready rooms and at the bar as to what it would look like and what it would do.

The design was finally unveiled as the A-12 Avenger II at the September 1990 Tailhook Reunion in Las Vegas, and it turned out to be a large, tailless delta aircraft with tandem seats under a long, clear canopy. Initial reaction was mixed, probably due to its unusual design. The latter was certainly radical – probably the most radical seen in the carrier business since the 1950s-era Vought F7U Cutlass. The contracting team was McDonnell Douglas out of St Louis, Missouri, and General Dynamics from Fort Worth, Texas. What was obvious was that the design optimised low observability, or 'Stealth', which was something the service knew it had to get into – a point that had been known since the USAF's 1988 public release of its F-117 'Stealth Fighter'.

The 'Sunday Punchers' of VA-75 would be the last Oceana A-6 unit. This is AC 503 BuNo 161660, departing its home base prior to *Desert Storm* on 23 August 1989 (*Bruce Trombecky*)

The A-12 programme was intended to be the future of Medium Attack in the US Navy by providing a carrier-based low observable aircraft to replace the A-6 series. Wrapped up in 'black world' secrecy for many years, the Avenger II, as it was christened, was finally revealed at the 1990 Tailhook Convention and cancelled only a few months later by then-Secretary of Defense Dick Cheney when the programme's true costs and failure to meet its delivery schedule became obvious (*US Navy*)

And then the floor dropped out.

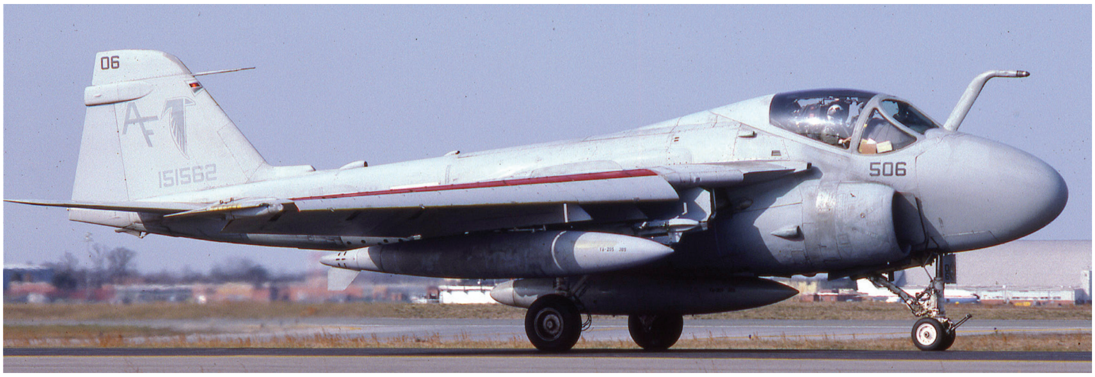
On 7 January 1991, a week before the start of *Desert Storm*, Defense Secretary Dick Cheney ordered the A-12 programme to be cancelled for 'breach of contract'. Legal details aside (which could fill an entire book themselves), it was now obvious that the A-6 did not have an apparent successor.

Throughout this period Intruders continued to deploy as part of every carrier that left CONUS. The last one built, A-6E SWIP BuNo 164385, rolled out of Calverton on 31 January 1992, ending 33 years of production of 'the Mighty Tadpole'. This historic airframe lasted barely 18 months, being lost on 8 September 1993 in a mid-air collision while deployed with VA-95 on board CVN-72. While all four aircrew ejected, both jets (the other being BuNo 161682) went to the bottom of the Persian Gulf.

In the fleet, operations remained focused on post-war Iraq, for although Kuwait had been liberated, Saddam Hussein remained in control of his country and had to be watched. The result was Operations *Southern Watch* and *Northern Watch,* where large portions of Iraq were ruled as 'no-fly zones' that were enforced by Allied aircraft operating from Saudi Arabia, the Persian Gulf or (from the north) Incirlik, in Turkey. Intruders were heavily involved in these missions, working off the carriers that spent time in the Gulf and occasionally carrying out attacks on Iraqi units that

VA-128, the Whidbey Island RAG, continued turning out replacement aircrew and maintainers until disestablished in September 1995. In this May 1993 shot NJ 535 BuNo 155643 is being re-spotted prior to carrier qualifications onboard *Carl Vinson*. This aircraft is an A-6E SWIP with 'plastic' wings, as denoted by the obvious white, barrel-shaped wing fold mechanism (*Author*)

535
35
155643
NAVY
VA-128



The Reserves operated Intruders for only about six years. This example was assigned to the 'Green Falcons' of VA-205, and it is seen here taxiing at NAF Washington in March 1992. BuNo 151562 was the 59th A-6 built, and it saw combat as an A- (with VA-75) and B-model with (VA-196) in Vietnam before being upgraded to A-6E configuration in the mid-1970s. It was missing its TRAM turret when this photograph was taken (*Bruce Trombecky*)

fired on them. On 23 January 1993, for example, CVW-15 aircraft flying from USS *Carl Vinson* (CVN-70), including VA-52 A-6Es and a pair of F/A-18As, bombed AAA sites in Iraq as part of *Southern Watch*. This was almost certainly the last time an Intruder dropped ordnance 'in anger'.

The 1993 *Nimitz* deployment to WestPac and the 'IO' was also the last cruise for the KA-6D version, VA-165 (as part of CVW-9) taking several with it and retiring the series upon return. From this point the A-6E SWIP would be the primary model, and 'bombers' equipped with buddy stores would carry the weight of tanking alongside air wing S-3Bs.

In the US Marine Corps, conversion of the remaining Intruder units to the new F/A-18D was in full swing. The Marine RAG, VMAT(AW)-202, had closed its doors in Cherry Point as long ago as September 1986, with the dwindling number of students required from then on going through VA-128 at Whidbey. The 'Bats' became VMFA(AW)-242 in December 1991. VMA(AW)-533 was next, getting Hornets in October 1992. The 'Bengals', who had returned from the final A-6 UDP 'pump' to Iwakuni in March 1992, made the change to VMFA(AW) a year later. It was up to the 'Moonlighters' of VMA(AW)-332 to finally retire the Intruder from Marine service in June 1993. It was the end of the small, but powerful, Marine All Weather Attack community, dating from October 1964 when VMA-242 had turned in its A-4C Skyhawks for the then new Grumman Intruder.

Back in the US Navy, if the future was not already obvious to some, it started being laid out as squadrons were rapidly disestablished. First to go was VA-185, in August 1991, its demise again leaving CVW-5, now embarked in *Independence*, with only one Intruder squadron. The 'Tigers' of VA-65, which had been beached after *Desert Storm* in favour of an odd arrangement whereby CVW-8 was joined by a Marine CH-53D unit, vanished into history in March 1992. Any remaining doubt as to where the Medium Attack community was headed ended in mid-1992 during an event held at Whidbey. The US Navy's senior aviator, Vice Adm Dick Dunleavy (as OPNAV OP-O5 – he had previously been an A-6 B/N and CO of VA-176), told a stunned crowd at the base theatre that Medium Attack was finished and would eventually be rolled up into the rapidly growing Strike Fighter (VFA) community. As bad as that shock was to the Intruder crowd, not known at this point was that new, larger versions of the Hornet that were being planned (eventually called Super Hornets) would in time consume both the VF and VS communities as well.

More squadrons were rapidly disestablished – VA-176 did not see the end of 1992, while stablemates VA-155 and -145 went the following year and 1994 saw the demise of VA-36 and -85. 1995 witnessed VA-35, -52 and -95 casing their colours as well.

1994 had also seen the end of the two Naval Reserve Medium Attack units. The Reserves had gone through a massive reorganisation in 1970 with the end result being the formation of two new air wings roughly along the lines of Regular Navy structure. Each of the three attack squadrons were equipped with A-4 Skyhawks and, from 1972, A-7 Corsair IIs. By the mid-1980s the decision had been made to introduce Intruders in each air wing as well. In July 1988 the Alameda-based 'Firebirds' of VA-304 traded in their A-7Es for Intruders, getting both A-6Es and KA-6Ds. An eastern counterpart, the 'Green Falcons' of VA-205 out of Atlanta, started transition in August 1990. According to Andy Niemyer, an NFO who served with VA-304, 'Flying with the reserves was great fun – we were a big flying club without a lot of the issues the Regulars had. The squadron was very proficient as well, largely due to the seniority of its aircrew.' Both squadrons would fly the Intruder through to December 1994, when they would be disestablished after only six years of Reserve duty with the type.

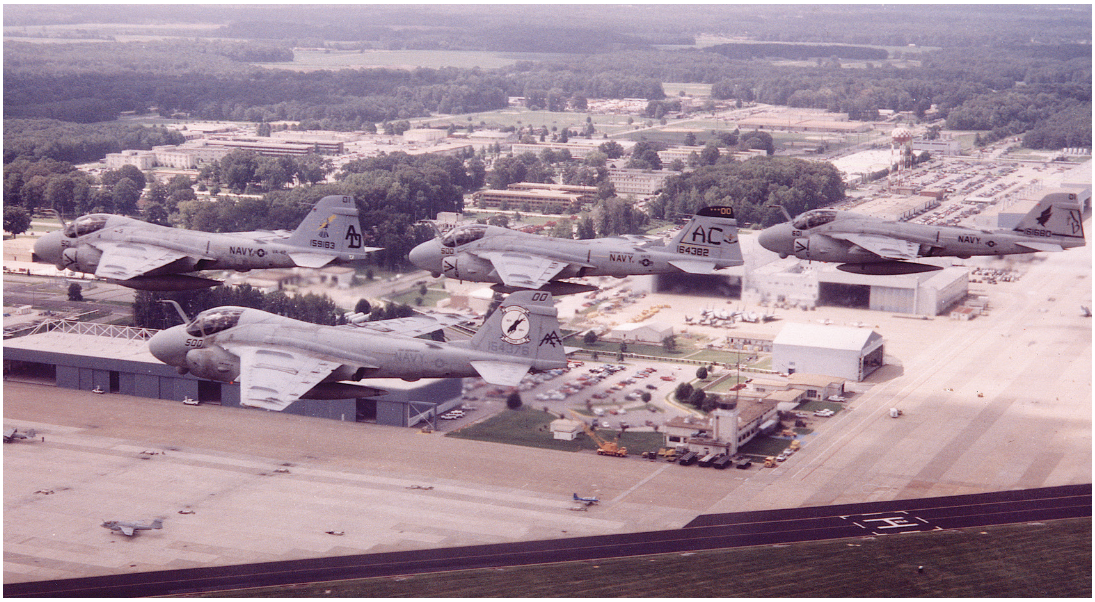
1996 dawned with only five Intruder units left in the US Navy. While the 'Boomers' of VA-165 would get the axe, two outfits, VA-34 and -115, were selected for transition to F/A-18Cs, becoming VFA units in the change. Which left VA-75 at Oceana and Whidbey's VA-196 as the last two standing. The 'Main Battery' had returned from its last deployment on 13 November 1996, flying off of *Carl Vinson* and saying goodbye to CVW-14, with which it had performed all but one of its 17 major deployments. The fabled 'Sunday Punchers' wheeled into the pattern at Oceana off of *Enterprise* on 19 December, having completed their final deployment with CVW-17. It was fitting that VA-75, the first Intruder squadron to deploy (in May 1965, and directly into combat), would be the last one.

The two squadrons' disestablishment ceremonies were held on the same day, 28 February 1997. Befitting Naval Aviation, there was a little gamesmanship here, however, as both squadrons arranged for 'last minute' carrier qualification periods in order to establish which unit could claim 'the Last Intruder Trap'. The 'Milestones' found a ready deck on *Carl Vinson* on 12-13 February – this time the ship was working within sight of Whidbey in the Strait of Juan de Fuca. Not to be outdone, the 'Punchers' managed to snag an invite from *Enterprise* and worked the ship's day pattern with two jets on 12 March, 12 days after their official disestablishment. A week later the last squadron CO, Cdr Jim Gigliotti, led the final section of A-6s to the boneyard in Tucson, Arizona.

It was truly the end of an era.

The hole the loss of the Intruder made in the air wing's combat capability was huge. CVWs initially

Adm Bill 'Fox' Fallon was the highest ranked former Intruder aviator ever, the B/N entering the service in 1967 and first seeing action in RA-5Cs during the Vietnam War, before moving to A-6s. He eventually commanded VA-65, CVW-8 and MATWINGONE. Fallon's final assignments were as Vice Chief of Naval Operations, Commander, US Pacific Command and Commander, US Central Command (*US Navy*)



Nearing the end, four A-6Es fly over NAS Oceana in a photograph taken in 1994. A VA-42 RAG bird has a jet from VA-35 on its port wing, with VA-75 and VA-85 Intruders echeloned to starboard. VA-42 had adopted VA-176's name and logo by this point (*US Navy*)

added another Hornet squadron, but that hardly improved precision strike and persistence capabilities. The rapid modification of the F-14 into a strike platform went a long way to make up for the lack of true Medium Attack, but, according to supporters, did not address the 'all weather' or range benefits the A-6 provided, let alone the value the aircraft gave as a tanker. Many of the men who flew Intruders went on to other aircraft, including Tomcats, Hornets and Prowlers. A number of them have continued to excel and rise to high leadership positions in the US Navy, and in the process have helped keep the 'Spirit of Medium Attack' alive and well in the service. Now, two decades later, the mention of the Intruder still frequently elicits remarks like 'retired too soon' and 'wish it was still in the Fleet'.

The A-6 was truly a classic of Naval Aviation.

Intruder sunset – two VA-65 'Fighting Tigers' A-6Es 'hawk the deck' during *Desert Storm* (*Author*)

APPENDICES

APPENDIX A

INTRUDER PRODUCTION

Total Intruders built – 708 (693 'bombers' and 15 EA-6As)
488 A-6A, 70 A-6E, 25 A-6E CAINS (TRAM Provisions, T/P), 71 A-6E TRAM, 34 A-6E SWIP, five A-6F and 15 EA-6A

MODIFIED AIRFRAMES (GRUMMAN DATA)

A-6A to NA-6A (3), NEA-6A (1), NEA-6B (3), EA-6A (12), A-6B (19), A-6C (12), KA-6D (90, 78 from A-6A and 12 from A-6E)
A-6A to A-6E (120), A-6A to A-6E CAINS (94), A-6A to A-6E TRAM (26)
A-6E and A-6E CAINS to A-6E TRAM (242)
A-6E AFC-409/AWG-21 (10)
A-6E TRAM AWG-21 (8)
A-6E SWIP (188)
A-6E SWIP/Composite Wing (136)

APPENDIX B

A-6 SQUADRONS 1974-97

AIRLANT – NAS Oceana

VA-34 'Blue Blasters'	1970-96	A-6A, B, C, E and KA-6D	CVW-1 and -7
VA-35 'Black Panthers'	1965-94	A-6E and KA-6D	CVW-8 and -17
VA-36 'Road Runners'	1987-94	A-6E	CVW-8
VA-42 'Green Pawns'/'Thunderbolts'*	1963-94	A-6A, C, E and TC-4C	FRS*
VA-55 'War Horses'	1983-91	A-6E and KA-6D	CVW-13
VA-65 'Tigers'	1965-92	A-6A, E and KA-6D	CVW-7, -13 and -8
VA-75 'Sunday Punchers'	1963-97	A-6A, C, E and KA-6D	CVW-3 and -17
VA-85 'Black Falcons'	1964-94	A-6E and KA-6D	CVW-17, -3 and -1
VA-176 'Thunderbolts'	1969-92	A-6A, C, E and KA-6D	CVW-6

Notes:
* VA-42 was renamed in 1992
* Second column shows all years of Intruder use
* Carrier Air Wings listed for 1974-96 timeframe only
* FRS – Fleet Readiness (Replacement) Squadron

AIRPAC – NAS Whidbey Island and NAF Atsugi

VA-52 'Knight Riders'	1968-95	A-6A, B, E and KA-6D	CVW-11 and -15
VA-95 'Green Lizards'	1972-95	A-6A, B, E and KA-6D	CVW-15 and -11
VA-115 'Arabs'/'Eagles'*	1970-96	A-6A, B, E and KA-6D	CVW-5
VA-128 'Golden Intruders'	1968-95	A-6A, E, KA-6D and TC-4C	FRS*
VA-145 'Swordsmen'	1968-93	A-6A, B, E and KA-6D	CVW-2
VA-155 'Silver Foxes'	1987-93	A-6E and KA-6D	CVW-10, -17 and -2
VA-165 'Boomers'	1967-96	A-6A, B, E and KA-6D	CVW-9
VA-185 'Night Hawks'*	1986-91	A-6E and KA-6D	CVW-5
VA-196 'Main Battery'	1966-97	A-6A, B, E and KA-6D	CVW-14

Notes:
* VA-115 forward deployed to Atsugi with CVW-5 in 1973; VA-185 moved to Japan in 1987
* Second column shows all years of Intruder use
* Carrier Air Wings listed for 1974-96 timeframe only
* FRS – Fleet Readiness (Replacement) Squadron

RESERVES

VA-205 ‘Green Falcons’	1990-94	A-6E and KA-6D	CVWR-20	Atlanta
VA-304 ‘Firebirds’	1988-94	A-6E and KA-6D	CVWR-30	Alameda

Note:
During the Intruder build-up of the mid-1980s the US Navy established VA-55 and -36 at Oceana and VA-185 and -155 at Whidbey. Orders were also cast to establish VA-12 (AirLant) and VA-164 (AirPac), but expansion plans were cancelled, along with any additional new squadrons.

US MARINE CORPS

VMA(AW)-121 ‘Green Knights’	1969-89	A-6A and E	Cherry Point and El Toro, CVW-2
VMAT(AW)-202 ‘Double Eagles’	1968-86	A-6A, E and TC-4C Cherry Point	FRS
VMA(AW)-224 ‘Bengals’	1966-93	A-6A and E	Cherry Point
VMA(AW)-242 ‘Bats’	1964-91	A-6A and E	El Toro
VMA(AW)-332 ‘Polka Dots’	1968-93	A-6A and E	Cherry Point
VMA(AW)-533 ‘Hawks’	1965-92	A-6A, E and KA-6D	Iwakuni and Cherry Point, CVW-3 and -17

EA-6A

VMCJ-1 ‘Golden Eagles’	1966-75	Iwakuni	
VMCJ-2 ‘Playboys’	1966-75	Cherry Point	re-designated VMAQ-2
VMCJ-3	1966-75	El Toro	re-designated VMFP-3
VMAQ-2 ‘Playboys’	1975-78	Cherry Point	
VMAQ-4 ‘Seahawks’	1981-91	Whidbey Island	Reserves
VAQ-33 ‘Firebirds’	1977-93	Norfolk and Key West (1979)	FEWSG
VAQ-209 ‘Star Warriors’	1977-90	Norfolk	Reserves
VAQ-309 ‘Axemen’	1979-90	Whidbey Island	Reserves

APPENDIX C

INTRUDER UNIT STRENGTH IN COMBAT 1974-96*

Cambodia – *Mayaguez*, May 1975

Coral Sea	CVW-15	VA-95	10 A-6A and 5 KA-6D

Iran – *Eagle Claw*, April 1980

Coral Sea	CVW-14	VA-196	9 A-6E CAINS, 4 KA-6D
Nimitz	CVW-8	VA-35	11 A-6E CAINS, 4 KA-6D

Lebanon – 4 December 1983

Independence	CVW-6	VA-176	9 A-6E TRAM and 5 KA-6D
John F Kennedy	CVW-1	VA-75	10 A-6E TRAM and 5 KA-6D
		VA-85	14 A-6E TRAM

Libya – *Prairie Fire*, March 1986

Coral Sea	CVW-13	VA-55	12 A-6E TRAM and 5 KA-6D
Saratoga	CVW-17	VA-85	12 A-6E TRAM and 4 KA-6D

Libya – *El Dorado Canyon*, April 1986

Coral Sea	CVW-13	VA-55	12 A-6E TRAM and 5 KA-6D
America	CVW-1	VA-34	10 A-6E TRAM and 5 KA-6D

Iran – *Praying Mantis*, April 1988			
Enterprise	CVW-11	VA-95	12 A-6E TRAM and 4 KA-6D
Iraq – *Desert Storm*, January–February 1991			
Midway	CVW-5	VA-115	7 A-6E TRAM and 2 KA-6D
		VA-185	7 A-6E TRAM and 2 KA-6D
Saratoga	CVW-17	VA-35	14 A-6E TRAM and 4 KA-6D
Ranger	CVW-2	VA-145	12 A-6E SWIP/TRAM
		VA-155	12 A-6E TRAM
America	CVW-1	VA-85	12 A-6E TRAM and 4 KA-6D
John F Kennedy	CVW-3	VA-75	13 A-6E SWIP/TRAM and 4 KA-6D
Theodore Roosevelt	CVW-8	VA-36	9 A-6E TRAM
		VA-65	9 A-6E TRAM
Sheikh Isa	MAG-11	VMA(AW)-224	10 A-6E TRAM
		VMA(AW)-533	10 A-6E TRAM

* Source – Official US Navy Allowance and Location Lists

APPENDIX D

A-6 COMBAT LOSSES 1974-96

4 December 1983	VA-85	A-6E BuNo 152915	Lebanon	*John F Kennedy*	1 KIA and 1 PoW
18 January 1991	VA-155	A-6E BuNo 152928	Iraq	*Ranger*	2 KIA
18 January 1991	VA-35	A-6E BuNo 161668	Iraq	*Saratoga*	2 PoW
2 February 1991	VA-36	A-6E BuNo 155632	Persian Gulf	*Theodore Roosevelt*	2 KIA

APPENDIX E

INTRUDER SAFETY

A total of 693 ‘bomber’ Intruders (not including EA-6As) were built by Grumman, with the last one being delivered in January 1992. Some 73 were lost in combat due to Direct Enemy Action (DEA) and 190 more were stricken due to operational mishaps. At least 38 survive in museums or as ‘gate guards’. The 38 per cent fleet loss rate is not necessarily excessive as it reflects more than 30 years of heavy use in a demanding flight environment, as well as periods of intense combat. Only four of the DEA losses were after Vietnam, one each due to radar-directed SAM, infrared-guided SAM, AAA and ‘unknown’. Five of the eight aviators in these events were lost, whilst three became PoWs.

Of the operational mishaps, 80 occurred prior to 1 January 1974, with the balance (110) afterwards. No fewer than 109 aircrew perished with their aircraft during this period, while 111 survived ejection. Illustrating the demanding environment that the Intruder and its crews worked in, 33 per cent of the post-Vietnam mishaps involved impact with the ground or water while flying at low level or at night around the carrier. Mid-air collisions accounted for nine losses (eight per cent) and fires and hydraulic failures 11 (ten per cent). The remainder were due to a variety of factors, including wing failure, electrical problems or faulty carrier equipment.

The final Intruder lost was on 3 June 1996 during the RIMPAC 96 exercise when target-towing VA-115 A-6E BuNo 155704, flying with CVW-5 from *Independence*, was accidentally shot down by the Japanese destroyer *Yūgiri* (DD-153) that was using its 20 mm close-in weapons system – the latter seems to have preferred the aircraft to the drogue it was dragging. Both crew ejected and were rescued by *Yūgiri*. Ironically, VA-115 originally established in 1942 as TBM Avenger-flying Torpedo Squadron 11, operating against the Imperial Japanese Navy.

APPENDIX F

ORDNANCE AND EXTERNAL STORES

The Intruder's fact sheet said it could carry 18,000 lbs of external ordnance, but that number does not tell the whole story. Although famed from the Vietnam War as 'carrying a bigger bomb load than the B-17', the A-6's actual load would be determined by the desired kinetic effects versus range and total weight.

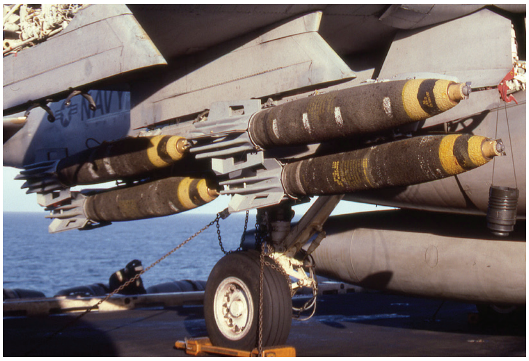
Mission planning for A-6 crews entailed detailed 'weaponeering' to determine what their load would be. They would typically start by referring to the Joint Munitions Effects Manual (JMEM), which, in simple terms, would help determine the optimum weapon, both type and quantity, for a specific target. The Intruder's Naval Air Training and Operating Procedures Standardization manual had four pages of allowable external stores configurations, with a lot of bomb combinations hanging on Multiple or Triple Ejector Racks (MERs and TERs). These illustrations included figures to determine drag count, which reflected the effects of wind resistance on the load – this was yet another critical element for determining things like range and fuel consumption.

The A-6 had five weapons stations, numbered 1 to 5, with each pylon being rated for up to 3600 lbs of ordnance/external stores. The TRAM model's empty weight was 26,500 lbs, while maximum catapult weight was 58,600 lbs. A full load of 28 Mk 82s, along with their MERs and about 16,000 lbs of internal fuel, would bring the weight up to almost 57,000 lbs and create an enormous drag count.

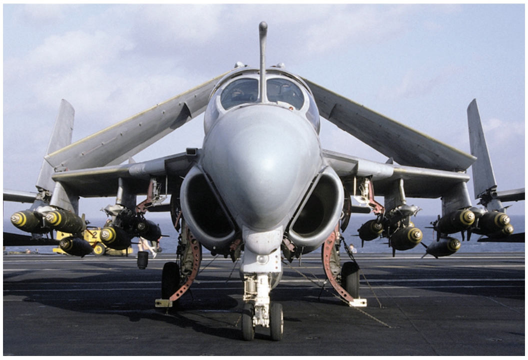
Intruder aircrew had to know what their aeroplane weighed for both launch and recovery, which is why many seemingly light weapons loads were selected in order to allow the jet to remain below maximum trap (recovery) weight in case they did not find targets – the alternative was forced ordnance jettison prior to returning to the carrier. With a 36,000-lb 'max trap' weight, a normal carrier landing only allowed 9500 lbs of fuel and ordnance to come back aboard. These are only a small part of the considerations crews had to make while dealing with carrier operations.

The photographs in this section show a number of weapons and stores frequently carried by the Intruder during its final two decades in frontline service.

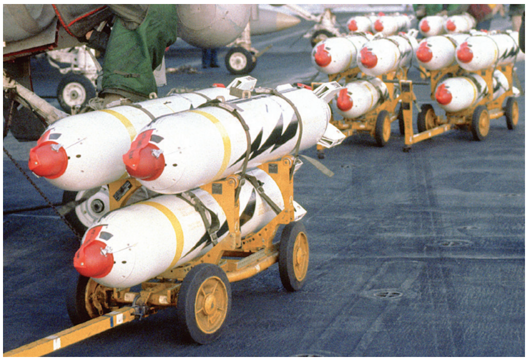
The author is greatly indebted to Jim Rotramel for his assistance with this section.



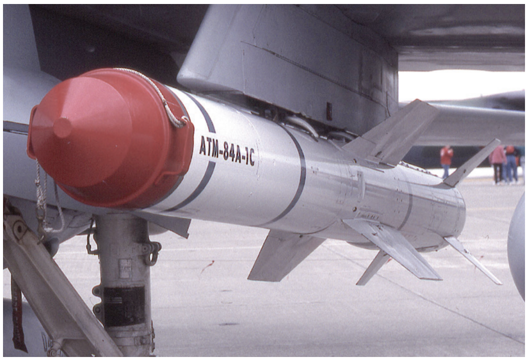
In what was probably the signature load for the A-6 series, these are 500-lb Mk 82 bombs shackled to a Multiple Ejector Rack (MER). In this case they are fitted with grey BSU-86/B high-drag Snakeye II fins, with only five bombs being carried on the inboard stations (front inboard is empty) and six on the outboard and centreline MERs. The bombs' Mk 82 Mod 2 warheads are fitted with M904E4 mechanical nose fuses and show the double-yellow bands and rough textured thermal protective (TP) covering synonymous with US Navy bombs. Note that the leading three-inch yellow band has been applied at the front of the warhead. This photograph of a VA-36 A-6E was taken on board *Theodore Roosevelt* on 7 March, 1991 (*Author*)



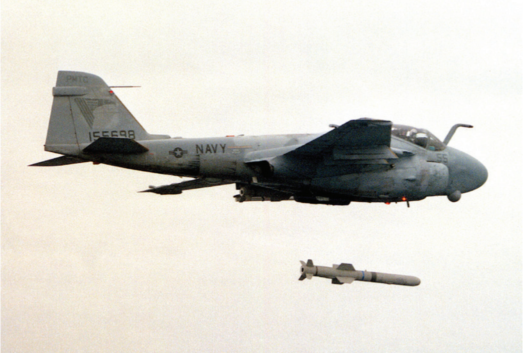
Mk 83 1000-lb bombs could be carried three to a MER in this fashion, or 12 in total as seen in this photograph of a VA-35 Intruder on board *Nimitz* in February 1986. If used for ordnance, the centreline was loaded in a similar fashion to the outboard stations. These TP bombs are fitted with conical fins and M904E4 fuses (*US Navy*)



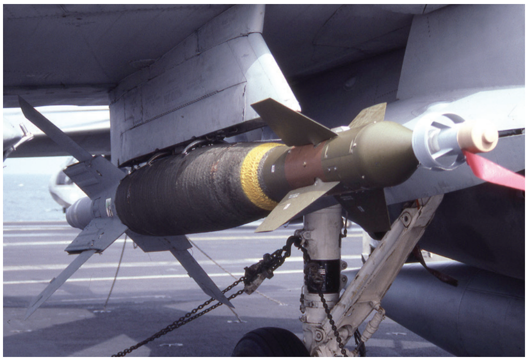
The 500-lb class Mk 7 was, far and away, the most numerous cluster weapon dispenser used by the A-6. When fitted with the Mk 339 'egg-timer' fuse, its mild detonating cord opened the dispenser's shell at a pre-set time after release, its bomblets spilling out to saturate a target area. They were loaded on MERs like Mk 82s (if on a composite-winged aircraft, the aft outboard stations on the outboard pylons were also left empty). The most common variant, the Mk 20 Rockeye II, housed 247 M118 anti-armour bomblets. Similar to the Rockeye II was CBU-59 APAM, shown here. It featured a dual 'Anti-Personnel/Anti-Material' bomblet that would react to the surface it hit as either an anti-armour penetrator or blast/fragmentary warhead for personnel. It was identified by the black lightning bolt painted on the side of the canister. These APAMs are about to be loaded on VA-55 Intruders while off Libya in 1986. The single yellow bands indicate that these canisters, like all APAMs, were non-thermally protected (*US Navy*)



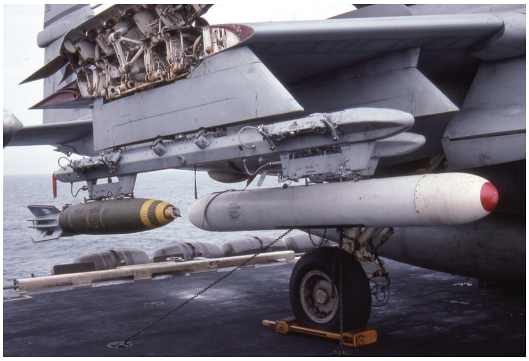
The primary anti-ship weapon used by the A-6 was the AGM-84 Harpoon, a subsonic, radar-guided missile. Introduced in 1977, it was first used in *El Dorado Canyon*, where it helped sink several Libyan patrol boats. Harpoon was not allowed during *Desert Storm* because of the risk it posed to the large amount of friendly shipping in the Gulf. Nonetheless, it remained the preferred weapon for any planned strike on Soviet Navy units throughout its service. This is an ATM-84A practice round mounted beneath the wing of a VA-196 jet at Whidbey Island in August 1989. AGM-84As were painted white, while AGM-84Cs were light ghost grey (*Author*)



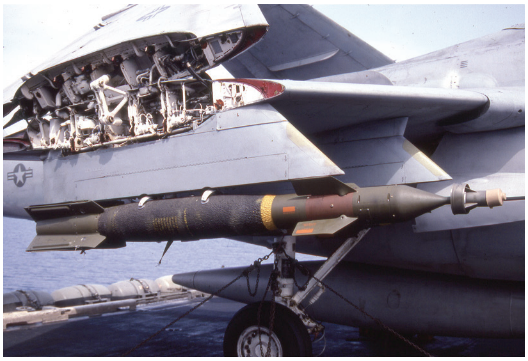
The AGM-84E Stand-off Land Attack Missile (SLAM) was a derivative of the Harpoon – indeed, its appearance was that of a lengthened Harpoon – that was introduced into combat in *Desert Storm*. It did not stay in the fleet long, being considered difficult to plan for and with significant limitations in operational use. Production was terminated shortly after Operation *Allied Force* in 1999 and the surviving missiles were eventually converted into AGM-84H/K SLAM-ER (Enhanced Response). This photograph shows a prototype SLAM being launched on its first developmental free-flight test by a Pacific Missile Test Center A-6E SWIP in June 1989. SLAMs were controlled by a AN/AWW-9B Walleye data link pod, usually carried on a separate aircraft (*US Navy*)



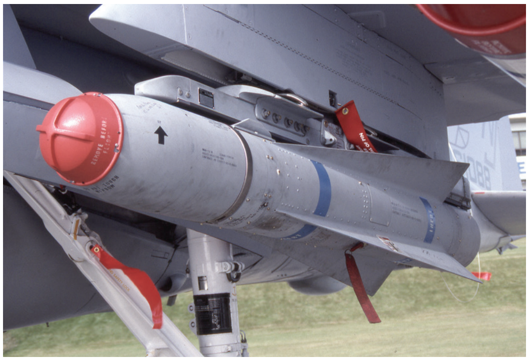
The AGM-123B Skipper II was developed at China Lake as a relatively simple, inexpensive anti-ship weapon that also provided some stand-off range. This 1200-lb missile was essentially a GBU-16 LGB with an AGM-45 Shrike rocket motor attached. The rocket motor installation normally required the Paveway II's pop-out fins to be extended at all times. Also note that when LGB guidance assemblies were mounted to TP warheads, they covered the most forward of the two yellow bands. Carried only by the A-6E, Skipper II was first used in combat by VA-95 during *Praying Mantis*, and saw additional service during *Desert Storm*. However, propellant failures in the latter campaign led to its replacement by other weapons and a quick retirement shortly thereafter. This VA-65 A-6E was photographed on board *Theodore Roosevelt* on 26 January 1991 (*Author*)



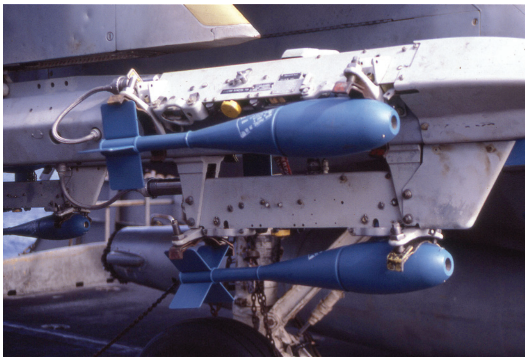
When CVW-8 started having rocket motor malfunctions with its Skipper IIs during *Desert Storm*, the unit switched to a pod of five-inch Zuni rockets for the anti-boat mission. This VA-36 jet has a LAU-10 launcher suspended from a TER on the inner station and a single Mk 82 Snakeye on a MER. This unusual configuration was adopted so as to allow the A-6 to remain within weight limits that would not require ordnance jettison for landing should no targets be found during its 6 February 1991 ASR boat hunting sortie (*Author*)



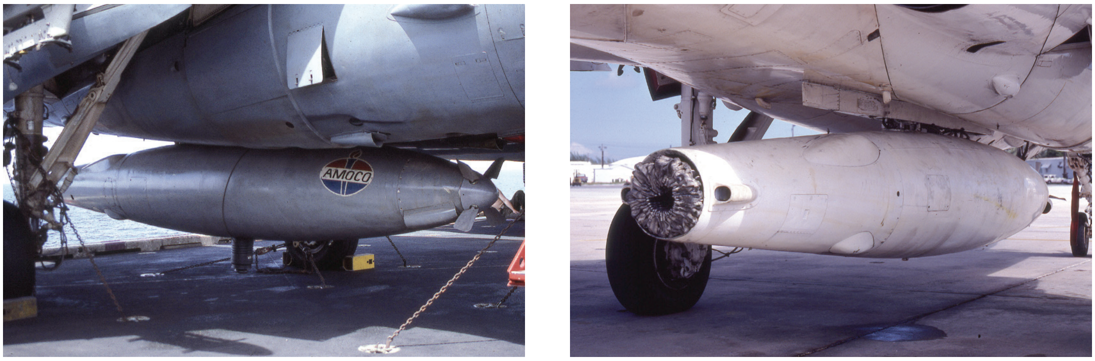
GBU-12D/B 500-lb LGBs were another popular weapon during *Desert Storm*, being hung directly from the parent rack. This one is shown on VA-65 AJ 500 BuNo 161675 during the conflict (*Author*)



The AGM-65 Maverick missile was introduced to the Intruder with the SWIP variant. Both the US Marine Corps-preferred laser-guided AGM-65E and the US Navy-preferred imaging infrared-guided AGM-65F version featured a 300-lb blast-fragmentation warhead. The US Marine Corps liked that the E-model could be guided to targets illuminated by ground-based laser designators, while the F-model was an ideal launch-and-leave weapon for use against small boats, among other targets. This one, an inert CATM-65F (note the absence of tail fins), is shown hung from the parent rack of a VA-128 aircraft at Whidbey Island in June 1992 (*Author*)



The Mk 76 'Blue Death' was a 25-lb practice bomb that had the same ballistic characteristics as a Mk 82. The slightly different, high-drag Mk 106 was used to simulate a Snakeye. Carried six to a MER, the 'Blue Death' littered target areas throughout America wherever US Navy aircraft dropped bombs. They featured a smoke charge in the nose to mark the spot of impact. These examples are being carried by a VA-196 A-6E in July 1985 (*Author*)



The Douglas D-704 and Sargent Fletcher 31-300 and A/A42R-1 'buddy stores' were a common site on Intruder centreline stations for most of its career, particularly as other US Navy tankers (EKA-3Bs and A-7s) were retired, forcing A-6 squadrons to pick up more aerial refuelling missions. Although this was partially offset once S-3s started carrying the store too, they were still used up until the end of the Intruder's service (*both Author*)

COLOUR PLATES

1

A-6E CAINS BuNo 155707/AB 511 of VA-34, USS *John F Kennedy* (CV-67), 1979

The 'Blue Blasters' missed Vietnam as an Intruder squadron, having been established as the second VA-34 at Oceana in 1970 with the insignia and name of an earlier A-4 Skyhawk unit. By the late 1970s they were flying A-6E CAINS as a member of CVW-1 embarked in CV-67. AB 511 is depicted here in the full-colour markings of the period, and it carries a load of Mk 106 practice bombs – a high-drag 'weapon' with characteristics similar to the Mk 82 Snakeye. Delivered to the US Navy as an A-6A in 1969, BuNo 155707 spent its final three years of fleet service as VA-115's CAG jet, flying from Atsugi, Japan. The veteran A-6 was stricken in May 1995.

2

A-6E SWIP BuNo 157002/AG 503 of VA-34, USS *George Washington* (CVN-73), 1993

CVN-73 was commissioned in July 1992 as the sixth member of the *Nimitz* class. It would be the newest carrier to deploy with the Intruder, VA-34 joining CVW-7 for two cruises in the vessel before the unit was re-designated as VFA-34 in 1996 prior to transitioning to the Hornet. AG 503 is a SWIP airframe, and it is depicted here with a set of 'Intruder Eyes' on the radome as was favoured by the unit during this period. The aeroplane carries a load of six Mk 83 1000-lb bombs, now supplied to the US Navy in grey so as to match the airframe. All markings are in black or dark grey.

3

A-6E CAINS BuNo 155703/AJ 505 of VA-35, USS *Nimitz* (CVN-68), 1981

The 'Black Panthers'' jets wore some of the classiest markings ever applied to the Intruder, and AJ 505 displays them here in their full glory just as the Tactical Paint Scheme was coming on the scene. The aeroplane carries a full load of 28 Mk 82 Snakeyes – perfect for an air wing air power demonstration off the carrier, where several A-6s would ripple their loads to create a 'Wall of Water' alongside the ship for the entertainment of observers. Originally delivered to the US Navy in 1969 as an A-model, BuNo 155703 went to the Aircraft Maintenance and Regeneration Center (AMARC) at Davis-Monthan AFB, Arizona, on 16 November 1993, having spent its final months in service with Reserve unit VA-205.

4

A-6E TRAM BuNo 161232/AA 503 of VA-35, USS *Saratoga* (CV-60), 1991

VA-35 flew off of *Saratoga* with CVW-17 during Operation *Desert Storm*, losing one A-6E and having another severely damaged. AA 503, with mission markings under the aft canopy, is depicted here carrying six Mk 83 bombs on the outboard MERs, the inboard stations being clean. The seemingly light load represents the change in thinking in the Medium Attack community during this period, where 'max tonnage' was replaced by carrying enough ordnance to hit the target while also retaining reasonable aircraft performance. Delivered to the US Navy in 1982, BuNo 161232 saw barely a decade of fleet service before it was withdrawn from use at NAS Norfolk in 1992 – its final fleet unit had been VA-85.

5

A-6E TRAM BuNo 161667/AJ 533 of VA-36, USS *Theodore Roosevelt* (CVN-71), 1991

CVW-8 had two Intruders that started *Desert Storm* in experimental water-soluble desert camouflage, with each of its A-6 squadrons having one aeroplane painted in anticipation of low-altitude flight. Both jets flew in combat in their desert colours until the paint was removed in early February, it being determined that the brown scheme was irrelevant at the medium altitudes that were actually being flown in the war. VA-36's AJ 533 shows seven mission symbols aft of the boarding ladder and carries 12 Mk 82 Snakeyes. BuNo 161667 was stricken in April 1994, just ten years after it had been delivered new to VA-34. Indeed, The jet's entire fleet service was spent with either the 'Blue Blasters' (up to 1990) or the 'Road Runners'.

6

A-6E SWIP BuNo 155655/NL 500 of VA-52, USS *Kitty Hawk* (CV-63), 1993

Shown late in the Intruder's career, 'Knightrider' NL 500 exhibits very subtle CAG markings and no colour. It carries a 'buddy store' on its centreline and a load of six Mk 76 'Blue Death' practice bombs on a MER. In this case the opposite station would normally be clean. Originally built as an A-6A in 1969, BuNo 155655 would be sent to AMARC in July 1994.

7

A-6E TRAM BuNo 159317/AK 501 of VA-55, USS *Coral Sea* (CV-43), 1986

The 'War Horses' of VA-55 made their first deployment after their 1983 establishment on board *Coral Sea* as a member of CVW-13 and participated in combat off Libya. AK 501, marked for CO Cdr Rob Weber, is loaded for 'Freedom of Navigation' flights in the Gulf of Sidra and carries an AIM-9 on station one for self-defence and a Harpoon inboard on station two for use against any threatening Libyan naval units. The inboard station on the starboard wing would have had a MER with two Mk 20 Rockeyes, while station five (right outboard) carried an empty MER. Delivered to the US Navy in 1975, BuNo 159317 served with VA-155 and VA-165 after being transferred out of VA-55 following its 1985-86 Mediterranean cruise. It was flown to AMARC by the 'Boomers' in October 1995 and struck off charge on 25 July 2000.

8

A-6E BuNo 154131/AG 500 of VA-65, USS *Independence* (CV-61), 1974

The mid- to late 1970s marked the height of the US Navy's 'full colour' period, as exhibited here by 'Cupcake 500' – the VA-65 CAG bird for CVW-7. An early A-6E conversion that lacked the CAINS modification, this former A-model (originally delivered in 1968) carries 12 inert Mk 82 bombs as might be seen during air wing work-ups at NAS Fallon, Nevada. A veteran of *Desert Storm* with VA-145, BuNo 154131 was subsequently stricken in May 1994 and mounted on poles 'in a climb' within Walker Field Park in Grand Junction, Colorado. The aircraft is painted in the colours of VMA(AW)-533, despite having never served with this unit.

9

A-6E TRAM BuNo 149957/AJ 504 of VA-65, USS *Theodore Roosevelt* (CVN-71), 1991

The 'Tigers' joined CVW-8 in 1990 and participated in *Desert Storm* alongside stablemate VA-36 in what would prove to be the final deployment for VA-65. AJ 504 is configured for Armed Surface Reconnaissance, with a load that could be recovered back aboard the ship without having to be jettisoned for weight. It carries a single Mk 20 Rockeye on station five and an AGM-123 Skipper II on the inboard pylon. The opposite wing would have had another Rockeye on the station one MER and a clean inboard station. The aircraft also has flak screens installed along the lower edge of the canopy. Veteran BuNo 149957 – the 43rd Intruder built – flew as an A-6A and B during the Vietnam War and would be stricken in February 1994. It was subsequently salvaged at Grumman's Saint Augustine plant in Florida prior to being dumped in the Atlantic Ocean to help form 'Intruder Alley' reef in June 1995. More than 60 parted out A-6 airframes were disposed of in this way, being used to create a recreational reef for divers some 25 miles off the Florida coast.

10

A-6E TRAM BuNo 157002/AC 502 of VA-75, USS *John F Kennedy* (CV-67), 1983

ATKRON-75 participated in the 4 December 1983 raid into Lebanon while flying from *John F Kennedy*. AC 502 is depicted here in the full Tactical Paint Scheme, with all other markings in black and greys. It carries a load of eight CBU-59 APAM, as denoted by the black lightning bolts on the weapon bodies. The inboards are empty, and the standard 300-gallon fuel tank is carried on the centreline. Also the subject of profile two, BuNo 157002 (delivered to the US Navy in 1970 as an A-6A) completed its final deployment with VA-34 as part of CVW-7 embarked in *George Washington* on 18 November 1994. Five months earlier, the aeroplane had been one of several A-6s painted with invasion stripes by the 'Blue Blasters' to participate in a 'Missing Man' formation over the Normandy beaches on 6 June to mark the 50th anniversary of D-Day. It was sent to AMARC at Davis-Monthan AFB and placed in storage on 8 December 1994.

11

A-6E SWIP BuNo 162195/AC 505 of VA-75, USS *John F Kennedy* (CV-67), 1991

The 'Sunday Punchers' were one of two squadrons to fly the A-6E SWIP in *Desert Storm*, VA-145 being the other. VA-75 put the aircraft's improved systems to good use, flying a variety of missions that included having Intruders configured as 'HARM trucks', as depicted here with BuNo 162195 carrying four AGM-88s. The aircraft also boasts an extensive mission tally on the nose, as well as a 'Safety S' just aft of the cockpit. Amongst the last Intruders built, BuNo 162195 served exclusively with VA-75 following an initial spell with test and evaluation unit VX-5. Stricken in September 1994, the aeroplane was supplied to the National Naval Aviation Museum at Pensacola and then loaned to the San Diego Air and Space Museum. It is presently on display at the latter organisation's Gillespie Field Annex, also in San Diego – the aircraft has not been repainted since retirement.

12

A-6E BuNo 158793/AA 500 of VA-85, USS *Forrestal* (CV-59), 1976

VA-85 was the first squadron to deploy with the A-6E, taking the new version to the Mediterranean in the autumn of 1972. 'Buckeye 500' has full CAG markings and a 'Battle E', as well as special red, white and blue feathers on the 'Black Falcon' that adorns the fin denoting America's 1976 Bicentennial (the design itself was influenced by the National Football League's Atlanta Falcons logo). The aeroplane carries a typical 'peacetime' load of three external fuel tanks and empty MERs on the inboard stations. Delivered new to VA-85 in 1974, BuNo 158793 was eventually stricken in February 1994 following a decade of service with the US Marine Corps (primarily with VMA(AW)-332). The aeroplane was one of the Intruder airframes dumped off the Florida coast in 1995-96, the jet helping to form the reef known as 'Intruder Alley'.

13

A-6E TRAM BuNo 154136/AC 554 of VA-85, USS *John F Kennedy* (CV-67), 1983

The 'Black Falcons' joined VA-75 as part of CV-67's 'All-Grumman' air wing in 1983 and participated in the 4 December 1983 strikes in Lebanon that led to the loss of squadron aircraft AC 556 BuNo 152915. During this cruise the unit flew a mixed fleet of grey/white and TPS aircraft with simplified lower-visibility markings. AC 554 is armed with just four Mk 20 Rockeyes, representing the incomplete bomb loads most aircraft carried on the day of the Lebanon strikes. Delivered to the US Navy as an A-6A in 1968, BuNo 154136 spent its final years of service with the US Marine Corps (specifically VMA(AW)-322 and -224) prior to being sent to AMARC in June 1993.

14

A-6E TRAM BuNo 149955/AB 506 of VA-85, USS *America* (CV-66), 1991

VA-85 flew off *America* with CVW-1 during *Desert Storm* and became the only Intruder squadron to launch combat missions from both the Red Sea and the Persian Gulf. AB 506, another 'oldie' (the 41st A-6 built, it was delivered to as an A-6A in 1963, modified into a B-model during the Vietnam conflict and was upgraded into an A-6E in the mid-1970s), totes a pair of GBU-12 500-lb LGBs alongside empty MERs. Markings are standard TPS in black and dark greys. BuNo 149955 participated in VA-196's final A-6 WestPac in 1996 (embarked in CVN-70 with CVW-14) and was then sent to AMARC for storage upon the unit's return to CONUS in November of that year.

15

A-6A BuNo 157019/NL 506 of VA-95, USS *Coral Sea* (CVA-43), 1975

Amongst the last A-models built (it was delivered in 1970), NL 506 BuNo 157019 was one of the 'Green Lizards' jets that struck Ream Field in Cambodia during the *Mayaguez* incident of 15 May 1975. Originally configured to support the Marines engaged on Koh Tang Island, NL 506 would instead be flown by Lt Steve Richmond and Lt(jg) Jim Kennedy against Ream Field. Its bomb load was six Mk 82 Snakeyes, with four on a MER on station one (left outboard) and singles on stations two (left inboard) and four (right inboard). Station five (right outboard) had a MER with four Mk 20 Rockeyes attached. This mission would be the last time A-6As were used in combat. Upgraded into an E-model in the mid-1970s, BuNo 157019 was sent to AMARC by VA-128 in May 1994.

16

A-6E TRAM BuNo 152925/NH 502 of VA-95, USS *Enterprise* (CVN-65), 1988

VA-95, flying off *Enterprise* as part of CVW-11, played a key role in Operation *Praying Mantis* – the one-day 'War At Sea' against Iranian naval vessels in the Persian Gulf on 18 April 1988. The missions flown that day followed several weeks of escorting friendly tankers throughout the Persian Gulf and Strait of Hormuz. A-6s were flown during this period with a number of different weapons configurations that provided a wide variety of possible responses to Iranian actions. With a fuel tank on the centreline, NH 502 carries a MER inboard with three Mk 20 Rockeyes and a single GBU-12 LGB outboard on its starboard side. Beneath the opposite wing was a single AGM-84 Harpoon on station two (inboard) and another external fuel tank outboard on station one. Delivered in 1967 as an A-model, BuNo 152925 became an A-6E nine years later and was eventually flown to AMARC in December 1993 following the disestablishment of its final fleet unit, VA-145.

17

A-6E TRAM BuNo 161690/NF 504 of VA-115, USS *Midway* (CV-41), 1988

One of two Intruder squadrons working off *Midway* during *Desert Storm*, the 'Eagles' of VA-115 flew seven (primarily late-build) A-6E TRAMs and a pair of KA-6Ds. BuNo 161690, which was delivered in 1985 and saw most of its fleet service with VA-115, carries a SUCAP load of three Mk 20 Rockeyes next to an empty station four. This aeroplane was one of a number of airframes at Grumman's St Augustine plant awaiting an overhaul and upgrade when the Intruder's future career with the US Navy was terminated. Its 'carcass' was eventually dumped in 'Intruder Alley' in 1995.

18

A-6E SWIP BuNo 162197/NE 501 of VA-145, USS *Ranger* (CV-61), 1991

The 'Swordsmen' were the second SWIP squadron to fly in *Desert Storm*. Late-build BuNo 162197 carries a load of 12 Mk 82 Snakeyes and has a full set of mission markings on its engine bay door. The aircraft also shows the application of its three-digit modex number near the engine exhaust, this seemingly odd location proving useful during a night rendezvous where the wingman could see them illuminated by lights located in the rear of the wing pylons. Delivered new to VA-145 in late 1986, BuNo 162197 saw all of its fleet service with this unit. Transferred to west coast A-6 FRS VA-128 in early 1993, the aeroplane was flown to AMARC by the 'Golden Intruders' in December of that same year – barely seven years after it had been delivered to the US Navy.

19

A-6E TRAM BuNo 154128/NE 414 of VA-155, USS *Ranger* (CV-61), 1991

ATKRON-155 was one of two additional Intruder squadrons formed at Whidbey during the 'growth period' of the late 1980s, the unit being teamed with VA-145 as part of *Ranger*'s 'All-Grumman' air wing during *Desert Storm*. NE 414 bears the name *CARRIE* on the base of its rudder and the silhouette of a camel on the engine door, the latter being adorned with the number 44 to denote the number of strikes it participated in. When the aeroplane came home to Whidbey it carried a much more elaborate scoreboard on its rudder, as did all of the squadron aircraft. Built as an A-6A in 1968, BuNo 154128 was retired in February 1994 and eventually dumped in 'Intruder Alley' the following year.

20

A-6E TRAM BuNo 161659/NG 501 of VA-165, USS *Ranger* (CV-61), 1994

NG 501 represents a Whidbey Intruder late in the community's life, with the aircraft being depicted in TPS greys with black side numbers. It is loaded as a 'mini-tanker' with two external fuel tanks on the wings and a buddy store on the centreline. Delivered in 1983, this aeroplane spent the majority of its career serving with AirLant units. Indeed, it participated in *Desert Storm* with VA-35. BuNo 161659 was sent to AMARC in July 1994.

21

KA-6D BuNo 149942/AE 522 of VA-176, USS *Independence* (CV-62), 1975

VA-176 BuNo 149942 is shown in a typical mid-1970s tanker configuration, with five external fuel tanks adding 10,000 lbs of fuel to the aircraft's maximum give. Only the 28th Intruder delivered – in 1963 – and one of 78 A-6As modified to KA-6D configuration in the late 1960s (an additional 12 were converted later from A-6Es as attrition replacements for the 23 KAs lost in mishaps), BuNo 149942 was the oldest airframe assigned to VA-176 in 1975. The veteran jet spent its final years in the fleet with VA-196 prior to being struck off charge at

Whidbey Island in August 1990. Most US Navy Intruder squadrons had three to five KA-6Ds assigned for cruise during the 1970s and 1980s.

22

A-6E TRAM BuNo 159178/AE 500 of VA-176, USS *Independence* (CV-62), 1984

Typical for the early to mid-1980s, VA-176 took a mixed bag of grey/white and TPS aircraft on its 1983-84 Mediterranean cruise embarked in *Independence*. The squadron would participate in operations over Grenada and Lebanon during this deployment. AE 500, ostensibly a CAG bird, shows no distinguishing markings to denote its assignment to the commander of CVW-6, with subdued paint predominating. The squadron designation and ship's name were either not applied or, more likely, have already faded into the background colour. The aeroplane is depicted with a light bomb load of a trio of Mk 82 Snakeyes on the inboard MER. Delivered in 1974, BuNo 159178 was eventually sent to AMARC in December 1995.

23

KA-6D BuNo 154154/NF 412 of VA-185, USS *Midway* (CV-41), 1991

By *Desert Storm* CVW-5 normally had four KA-6Ds assigned, with two belonging to each of its Intruder units. While the 'bombers' were all in TPS by now, KA-6Ds were still prescribed to be in the older grey/white scheme in order to make them more conspicuous while plying their tanker role. VA-185's NF 412 carries four 300-gallon fuel tanks under the wings, although 400-gallon tanks could alternately be carried on the inboards. The centreline has a buddy store, which was not uncommon for KAs at that point, giving the aircraft a secondary refuelling point if the fuselage system failed. Delivered in 1968 as a straight A-6A, BuNo 154154 did not last long after the war, being stricken in April 1992 following VA-185's disestablishment the previous year.

24

A-6E TRAM BuNo 152905/NK 500 of VA-196, USS *Independence* (CV-62), 1990

While the arrival of the TPS in the early 1980s generally led to the demise of the gaudy markings of the Vietnam War period, some air wings still allowed one 'Easter Egg' per squadron, which typically meant a CAG bird. CVW-14 was one of these air wings, with 'Milestone 500' showing a full-colour tail (including DCAG titling in orange and an old-school 'CAG rainbow') in 1990 while flying from *Independence*. Like most Intruders at this point, NK 500 carries a buddy store on the centreline to 'feed' CVW-14's thirsty Hornets, drawing fuel from two external tanks inboard. The outboard pylons have MERs loaded with Mk 62 'Quick Strike' weapons – Mk 82 500-lb bombs modified with sensors and fusing allowing their use as sea mines. This aircraft participated in *Desert Shield* during the latter stages of CVW-14's 1990 WestPac/'IO'/Persian Gulf deployment. Delivered in 1967 as an A-6A, BuNo 152905 ended its fleet service with VA-145 after completing the unit's final fleet deployment in 1992-93. The 'Swordsmen' disestablished on 1 October 1993 and this aircraft was sent to AMARC the following month.

25

A-6E TRAM BuNo 161688/NE 401 of VMA(AW)-121, USS *Ranger* (CV-61), 1985

The 'Green Knights' were one of two US Marine Corps Intruder squadrons to regularly deploy aboard carriers in the 1980s, in their case joining VA-145 as part of Ranger's CVW-2. NE 401 is shown during the air wing's 1985 Fallon detachment, armed with two Mk 84 2000-lb bombs and a Tactical Aircrew Combat Training System pod on the inboard station. The squadron would eventually be the first Marine A-6 unit to re-equip with the F/A-18D, in 1990. Delivered new to VMA(AW)-121 in 1983, BuNo 161688 was eventually sent to AMARC for storage in November 1993 following brief service with VA-205.

26

A-6E TRAM BuNo 155684/WK 502 of VMA(AW)-224, Shaikh Isa, Bahrain, 1991

One of two US Marine Corps A-6 squadrons to participate in *Desert Storm*, VMA(AW)-224 flew TRAM jets from Shaikh Isa, Bahrain, with the 3rd MAW. WK 502 is armed with four Mk 77 napalm bombs on its inboard wing stations, with clean outboards. Two canisters per MER, always hanging on the lower points, was the maximum load allowed by A-6 NATOPS, which ensured clean separation of the fire weapon. The Marines appear to have been the only service to use napalm during the conflict, delivering it on Iraqi troops from both A-6s and AV-8Bs. WK 502 is shown here prior to the application of the large bomb scoreboard that was seen when the jet returned home to Cherry Point after the war. Delivered in 1969 as an A-6A, BuNo 155684, was upgraded into a C-model the following year and then became an A-6E in 1974-75. Following fleet service with both AirPac and AirLant units, the aeroplane was transferred to the US Marine Corps in 1983. It served with both VMA(AW)-224 and VMA(AW)-332 prior to being stricken in February 1994 and salvaged at Grumman's Saint Augustine plant. It too was dumped in 'Intruder Alley' in 1995.

27

A-6E BuNo 159179/DT 12 of VMA(AW)-242, MCAS El Toro, California, 1978

This early-build A-6E exhibits full colour markings synonymous with the period after the Vietnam War. DT 12 is carrying an empty MER on the centerline and TERs on the outboard, with a single LAU-10 Zuni launcher on the latter – a practice load that it could use on the 'Kitty Baggage' and 'Inky Barley' bomb ranges near Yuma. Delivered in 1974, BuNo 159179 also spent time with VMA(AW)-121 prior to being transferred to AirLant. It ended its career with VA-34, participating in the unit's final Mediterranean deployment with the jet, as part of CVW-7, between January and July 1996. The aeroplane was flown to AMARC from Oceana shortly after the 'Blue Blasters' returned from cruise.

28

A-6E BuNo 152641/EA 363 of VMA(AW)-332, MCAS Iwakuni, Japan, 1981

The early 1980s saw a rapid decrease in colourful paint schemes in both US Navy and US Marine Corps Intruder squadrons in order to reduce their visual signature. As the new TPS arrived many units subdued the plumage on their existing grey and white aircraft accordingly. VMA(AW)-332 used these markings during its 1981 UDP to Japan, featuring off-white lettering. While not unattractive, this scheme did not have the same impact as the colours previously carried. EA 363 (a 1966-build A-6A that became an early E-model upgrade in 1973) is armed with 12 Mk 82 Snakeyes. The external fuel tanks at this point could be either white or TPS grey. Used almost exclusively by the US Marine Corps (bar a brief spell with

VA-35 in the mid-1980s), BuNo 152641 ended its career with VA-205. Flown to AMARC in November 1993, it was stricken just three months later.

29

KA-6D BuNo 152927/AA 516 of VMA(AW)-533, USS *Saratoga* (CV-60), 1984

When VMA(AW)-533 became the first US Marine Corps Intruder squadron to be assigned to a carrier air wing after Vietnam, it had a quartet of KA-6Ds assigned, becoming the second – and last – 'Leatherneck' unit to fly the type. AA 516 BuNo 152927 was one of the tankers assigned to VMA(AW)-533, the aeroplane being transferred in from VA-34. It is depicted here in standard markings, which includes a dark grey 'tanker stripe' around the fuselage and a stylised version of CVW-17's 'AA' tailcode. The jet carries five external fuel stores, at least two of which are in TPS grey, the others in white. Delivered in 1967 as an A-6A, BuNo 152927 ended its service career with the 'Blue Blasters', being stricken in November 1992 after completing VA-34's 1991-92 Mediterranean deployment with CVW-7 and CVN-69.

30

EA-6A BuNo 148618/CY 02 of VMAQ-2, MCAS Cherry Point, North Carolina, 1977

Undoubtedly the most famous of all EA-6A markings were those carried by VMCJ-2/VMAQ-2, its glossy black tail and Playboy bunny emblem hailing from a less sensitive era. 'Charlie Yankee 02' carries three ALQ-76 jamming pods, two external fuel tanks and ALE-32 chaff pods on stations A/B, outboard of the wing fold. BuNo 148618 was the eighth Intruder built (in 1961), and it would serve as the A2F-1H (EA-6A) prototype in 1962-63. After many years with the Naval Air Test Center, the aeroplane eventually commenced frontline service with VMCJ-3 in 1973. It switched to VMAQ-2 the following year, where the aeroplane remained until it spent more than a year in storage at AMARC in 1980-81. Returning to service with newly established VMAQ-4 in May 1981, the jet was passed on to VAQ-209 shortly thereafter. When the latter unit re-equipped with EA-6Bs in 1990-91, BuNo 148618 was assigned to VAQ-33. It was eventually retired when the EW squadron disbanded in 1993, the aeroplane subsequently being preserved at VAQ-33's NAS Key West, Florida, home as 'GD 100'.

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First published in Great Britain in 2017 by Osprey Publishing
PO Box 883, Oxford, OX1 9PL, UK
1385 Broadway, 5th Floor, New York, NY 10018, USA
E-mail: info@ospreypublishing.com

Osprey Publishing, part of Bloomsbury Publishing Plc

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A CIP catalogue record for this book is available from the British Library

ISBN: 978 1 4728 1877 5
PDF e-book ISBN: 978 1 4728 1878 2
e-Pub ISBN: 978 1 4728 1879 9
XML ISBN: 978 1 4728 2175 1

Edited by Tony Holmes
Cover Artwork by Gareth Hector
Aircraft Profiles by Jim Laurier
Index by Angela Hall
Originated by PDQ Digital Media Solutions, UK

Osprey Publishing supports the Woodland Trust, the UK's leading woodland conservation charity. Between 2014 and 2018 our donations will be spent on their Centenary Woods project in the UK.

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Front Cover
The A-6E SWIP was the final warfighting improvement to the Intruder family. Based on the TRAM variant and introduced in 1990, the SWIP added both AGM-65 Maverick and AGM-88 HARM to the aircraft's bag of tricks. As of January 1991 and the start of Operation *Desert Storm*, only two of the US Navy's nine deployed A-6 squadrons had received the SWIP, namely the 'Swordsmen' of VA-145 and VA-75 'Sunday Punchers'. On the war's opening night, VA-145 used two SWIPs as 'HARM trucks', each shooting four of the weapons while providing cover for CVW-2 Intruders striking targets inland.

Lt Cdr John 'J R' Haley and his Bombardier/Navigator Lt Bud Abbott launched from USS *Ranger* (CV-61) in NE 501 (BuNo 162197) and climbed to altitude as other Intruders attacked the Um Qasr naval base at near sea level in the face of a completely functional Iraqi air defence system. The 'Swordsmen' crew flew in an orbit with another Intruder and started firing HARMs toward the threat. It was the first time either crew had ever shot a HARM, let alone at night, and both were surprised by the way the missile 'lit up the night' as it climbed away from their Intruder. Backed by jamming and additional HARMs from VAQ-131 EA-6B Prowlers (also part of CVW-2), their efforts kept the SAM threat honest and their heads down while their air wing mates hit their targets. They would repeat the mission the following night, before going low on a memorable mining sortie on night three of Operation *Desert Storm* (*Cover artwork by Gareth Hector*)

Previous Pages
The Grumman Intruder formed the core of US Navy carrier-based strike power for more than 30 years. This division of A-6E TRAMs, from the 'Green Lizards' of VA-95, are shown flying in left echelon for the photographer as they pass Mount Baker, in Washington, just 60 miles northeast of their Whidbey Island home in the late 1980s (*US Navy*)